

THE DEVELOPMENT OF A
CAREER PLANNING READINESS INVENTORY
FOR MIDDLE SCHOOL STUDENTS

By

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The purposes of this study were to develop, refine, and field test the Career Planning and Readiness Inventory (CPRI), and to determine its validity and reliability for use with middle/junior high school students. The 60-item CPRI measures readiness for career planning, may be administered individually or in groups, and has a fifth grade reading level.

The CPRI was administered to 3727 seventh, eighth, and ninth grade students from five public schools in Florida. The students were randomly assigned by computer in a 75 to 25 ratio to Group I for initial analyses and group II for cross-validation. Demographic data were collected regarding age, grade, gender, ethnicity, achievement level, and student lunch rates. Common factor analysis resulted in

four factors (Career Aspirations, Career-Related Attitudes and Behaviors, Career Exploration, and Negatively-worded Career Statements). The factors maintained moderate to high internal consistency reliabilities (coefficient alphas) in the cross-validation study. The test-retest reliability coefficients for CPRI total and factor-related subscale scores across a two-week period were in the moderate to high range (.39 to .78).

The CPRI appears to be independent of achievement level and ethnic bias. Some gender differences did occur. However, the four-factor solution and the factor structure were maintained regardless of gender. Some differences in readiness for career planning across three student lunch rates were noted.

It was concluded that the CPRI is a reliable, valid and useful inventory that can be used to assess middle/junior high school students' readiness for career planning, aid career guidance, and evaluate the effectiveness of career development interventions.

CHAPTER I INTRODUCTION

Middle school students face unique challenges. They are at a transition point, physically, emotionally, and intellectually. This pivotal state is marked by trying on different identities, leaning heavily on peer support, and experimenting with independence. During this time of personal upheaval, students need to start thinking about their future careers. How do we know if they are ready?

Counselors and teachers face the challenge of helping these students to plan their futures. Current instruments for assessing the level of career development are not appropriate for use with these students. Therefore, an instrument is needed that will aid in assessing students' readiness for career planning and provide educators with practical information for guiding students' career development.

Career education was made popular in the early 1980s when guidance counselors were first placed in the schools. The primary purpose of career education in those early years was to help high school students find jobs. Times have changed, and so has the world of work.

Thirty or forty years ago, a person entering an occupation could expect to stay in it until retirement. However, in 1985, 45% of employed men and 58% of employed women had been in their jobs four years or less. An even stronger indication of job instability has been shown by only 13% of men and 6% of women working for the same company for more than 20 years (Biracree & Biracree, 1988). Occupations in industries which were once considered stable, such as automobile and steel manufacturing, have changed with the advent of robotics and computers. Many jobs have become extinct, leaving workers untrained and unprepared for employment in other fields. Unfortunately, the job market is changing so rapidly that many other occupations now in existence will disappear by the year 2000 (Cetron & Appel, 1984). Jobs not yet envisioned will be created.

The changing world of work is a challenge for education. More specifically, it is a challenge for education for career development, which has evolved through various nomenclatures from vocational guidance to career education to career guidance. Whatever the title, the central issue remains the same--to prepare students for choosing and succeeding in a career.

In the past, education for career development focused primarily on the development of job-specific skills. More recently, career preparation has taken a broader approach. Rather than preparing for specific occupations which may not even exist in ten years, students are being encouraged to

learn how to adapt to a changing environment. In addition to learning basic skills of reading, writing and mathematics, they must become more aware of the process of education. They must learn how to learn. They also must come to terms with themselves as growing, changing decision-makers in an ever-changing world (Tennyson, Hansen, Klaurens, & Antholz, 1988).

The information age (Naisbitt & Aburdene, 1985), or what Toffler (1980) termed the "Third Wave," ushered in new career expectations. According to Toffler (1983), future workers need to be resourceful, innovative, educated, and individualistic persons who can invent their own forms of organization. A new economy based upon the exchange of information requires human relations skills, not just cognitive ability. People with interpersonal skills will be needed to train and retrain workers. People who are empathetic, who have aesthetic and athletic skills, and who are sensitive managers and organizers will be in demand. These workers will design new workstyles and help establish new values.

Herr (1984), in response to national reports on reform in schooling, argued that change needs to focus on preparing workers to be competitive in an international economy. Therefore, they will need skills in mathematics, science, foreign languages, communication, and computer literacy. Just as important as academic abilities will be the need for skills in self-understanding and interacting with others,

and in understanding and performing within a work context. Workers will also be needed who are teachable and open to training and retraining, and who are amenable to lifelong learning and the constructive use of leisure. These aspects of education are essential to prepare students to become workers who are adaptable, value work, and are competent to manage their own careers and economic progress (Herr, 1984).

Need for the Study

Early adolescence, encompassed by the middle and junior high school years, is an important transition period. It is marked by physical, emotional, and intellectual changes. More specifically, in early adolescence young people reach puberty and experience spurts in physical growth. They feel awkward and are concerned with their appearances. They seek acceptance from their peers and often conform to the behaviors and expectations of their peer groups. Moodiness and unpredictability characterize their emotions. Intellectually, they move from thinking in concrete terms to being able to reason abstractly and to engage in higher-order thinking. They seek self-identity and often experiment with different roles, behaviors, and attitudes. They may challenge the authority of parents and teachers, or they may acquiesce, silently finding their own identities (Biehler, 1974).

Turning Points, the 1989 report of the Carnegie Council on Adolescent Development, warned that by age 15

substantial numbers of American youth risk reaching adulthood unable to meet adequately the requirements of the workplace, the commitments of relationships in families and with friends, and the responsibilities of participation in a democratic society. According to the report, half of all adolescents, or approximately 14 million young people, are moderately to extremely vulnerable to multiple high risk behaviors and school failure (Hersch, 1998). Although many "at risk" youth need special attention, all young people need to develop the skills, attitudes, and behaviors that prepare them for the world of work.

Schools place additional demands on students during the middle school years, requiring them to make tentative career decisions and plans for their educational and occupational futures. Specifically, by the end of eighth grade students are expected to plan their high school curricula and to choose courses. They begin to lay a foundation for immediate entry into the world of work or plans for higher education. They must take more responsibility for making decisions about education and careers.

Career interests and needs of adolescents have been difficult to assess because of their broad range of developmental changes. Most attention has been given to later adolescents in high school. In addition, there is a lack of adequate measuring devices to help assess career readiness and development during early adolescence. The

major instruments now available, for example, are the Career Maturity developed by Crites (1978a) and the Career Development Inventory developed by Super, Jordaan, and Myers (1981). They are more appropriate for advanced high school and college level students. The reading level and reasoning ability required by such instruments make them inappropriate for students in the grades six through eight. Also, the career development models of Crites (1978b) and Super (1983) focus on the tasks students face during high school and beyond, not on the tasks of early adolescents.

Instruments designed for younger students, such as the Career Assessment Inventory (Fadale, 1974) and the Career Education Cognitive and Affective Questionnaires (Smith, 1975), are outdated in content and do not follow a specific career development model. They also lack normative data, and their reliability and validity data are inadequate for early adolescence.

There is a gap in the availability of appropriate instruments for assessing the career development of middle and junior high school students. Therefore, the need exists to develop an instrument for this age level that is related to readiness for career planning.

Theoretical Background for Career Development

There are several career theorists whose ideas have implications for this study. Among them are Ginzberg, Ginzberg, Axelrod, and Herma (1951), who posited

occupational choice as a developmental process that occurs over a number of years and that follows the fantasy, tentative, and realistic stages. The tentative stage, which is associated with early adolescence, is characterized by advances in self-knowledge, time perspective, and reality orientation.

Holland (1966, 1973, 1985) described personality as the major influence in career choice and development. Accordingly, people search for environments, or workplaces, in which they can exercise their skills and abilities, express their attitudes and values, and take on agreeable roles. Rather than career choice issuing from personality, Tiedeman (1961) and Tiedeman and O'Hara (1963) described career decision making as a series of stages through which an individual progresses. Adjustments to career are made as problems and challenges arise. In addition, from a social learning perspective, Krumboltz (1979) attempted to explain the influence of gender, ethnicity, and socioeconomic status on career decision making. Super (1953, 1957, 1963, 1983, 1984) detailed a continuous process of development characterized by a lifelong succession of stages. He described a process by which self-concept is developed and implemented in career choice. Compromises are made through role play between the self-concept and reality.

Super (1953, 1957, 1963, 1983, 1984) proposed five vocational life stages which encompass the entire life span. During the growth stage (birth to approximately age 14), the

central activity is one of forming a picture of the self and an orientation to the world of work. Exploration (age 14 to 24) is characterized by increasing examination of self and role playing upon which to base a tentative occupational choice. In the establishment stage (ages 25 to 44), effort is directed toward adjustment to, and advancement in, a chosen occupation. Maintenance (ages 46-64) is marked by a shift from efforts to advance to preserving one's achieved status. Finally, in the decline stage (age 65 and on), a person is concerned with gradual disengagement from former work activities and seeks new roles to replace those formerly associated with work.

Life stage theories of career development present predictable vocational developmental tasks that require different kinds of attitudes and behaviors for resolution. For example, the tasks of the exploration, or adolescent, stage include crystallizing and specifying a vocational preference. To accomplish these tasks successfully, the adolescent must become aware of the need to crystallize and specify preferences, able to use appropriate resources, and aware of present-future relationships.

Several of Super's original propositions (1953, 1963, 1983, 1984) are pertinent to this study. Super proposed that people differ in their abilities, interests, and personalities. As such, he added that these characteristics qualified them for a number of occupations. In addition, he postulated that choice and adjustment are continual

processes that result from the changes in vocational preferences, competencies, and self-concepts occurring with time and experience. Further, he suggested that development through life stages (i.e., growth, exploration, establishment, maintenance, and decline) could be guided. He explained that such guidance could be helpful partly by facilitating the process of maturation of abilities and interests and partly by aiding in reality testing and self-concept development.

Super (1983) conceptualized the determinants of career maturity as planfulness, exploratory attitudes, decision-making skills, information, and realism. He further noted that a sense of autonomy, self-esteem, and future perspective are essential to planning, exploration, and the acquisition of career skills and information. These traits develop in childhood and are strengthened or weakened in adolescence according to educational experiences.

In summary, there is some degree of agreement regarding the importance of the five basic dimensions which emerged from these theorists. Specifically, emphasis has been placed on (a) career exploration, (b) work-related behaviors, (c) knowledge about careers, (d) work-appropriate attitudes, and (e) career aspirations (Ginzberg et al., 1951; Holland, 1966, 1973, 1985; Krumboltz, 1979; Super, 1953, 1957, 1963, 1983, 1984; Tiedeman & O'Hara, 1963).

Purpose of the Study

The purpose of this study was to develop an assessment instrument which focused on the career planning and readiness of middle and junior high school students and investigate its construct validity. More specifically, the intent was to (a) develop a student inventory which focused on five basic areas, (b) administer the instrument to a sample of middle/junior high school students, and (c) analyze the data within the framework of a construct validation study. Specifically, this included investigation of the factor structure, convergent and discriminant validity of total test scores, reliability, and differential group performance. For the purposes of instrument development and data collection, seventh, eighth, and ninth grade students participated in the study.

Research Questions

After a review of the professional literature was completed, five basic dimensions were identified upon which to base the assessment of middle/junior high school students' readiness for career planning. The career dimensions in turn were used to generate a list of possible test items, which were then organized into a formal instrument. It was called the Career Planning Readiness Inventory (CPRI). The specific research questions for this study are related to various aspects of construct validation of this instrument:

1. What is the factor structure of the Career Planning Readiness Inventory (CPRI)?
2. Do the factor loadings support the theoretical dimensions of the CPRI?
3. What is the test-retest reliability and internal consistency of the CPRI and any factor-related subscales?
4. What is the correlation between the CPRI and the Career Development Inventory (Super, Jordaan, & Myers, 1981) (i.e., convergent validity)?
5. What is the relationship between the subject variable of achievement level, as measured by the Stanford Achievement Test (1989), and level of career development as measured by the CPRI (i.e., discriminant validity)?
6. What is the relationship between students' grade level and degree of career development as measured by the CPRI?
7. What is the difference between gender groups in levels of career development, as measured by the CPRI?
8. What are the differences between ethnic groups in levels of career development, as measured by the CPRI?
9. What are the differences based on the subject variable of student lunch rate, used to estimate family income, and levels of career development, as measured by the CPRI?

Definition of Terms

For the purposes of this study, the following definitions were used.

Career planning readiness is the degree to which one's background of self-awareness, attitudes, behaviors, knowledge about careers, and aspirations prepare a person to make tentative career plans.

Career exploration involves exploring careers through such activities as talking with people about jobs, reading about occupations, and visiting job sites. It includes self-evaluation of interests, values, and abilities in relation to different occupations.

Work-related attitudes pertain to the disposition one has toward the world of work as shown by being responsible, adaptable, diligent, and willing to learn.

Work-related behaviors refer to behaviors exhibited in school that are related to effective work habits such as paying attention, following directions, completing assignments, and working independently.

Career aspirations refer to one's awareness of and concern for the future as portrayed in stated goals, imagined outcomes, and fantasies that relate to careers and lifestyles.

Career knowledge concerns facts and information about the world of work that are considered to be essential for career planning. It includes information about educational requirements for work, employment trends, career resources, and job-seeking.

Organization of the Study

A review of related professional literature is presented in Chapter Two. The research methodology is discussed in Chapter Three, including the development of the instrument, population and sample, research procedures, and

statistical analyses of the data. The findings of the study are presented in Chapter Four, while the summary, limitations, conclusions, and recommendations appear in Chapter Five.

CHAPTER II REVIEW OF LITERATURE

The world of work is changing. The bases for work, education, and the economy are shifting as we move from an industrial-based to an information-based society (Naisbitt, 1982; Naisbitt & Aburdene, 1985; Toffler, 1980, 1983). Occupations are shifting from manufacturing, production, and manual labor to service, technical, and professional emphases (Cianni-Surridge, 1983). A total of 90% of the new jobs expected by the year 2000 will be in service-producing, not in goods-producing, industries (Hoyt, 1989).

Educational expectations are changing as well. A substantial number of the 21 million new jobs expected between 1986 and 2000 will require more education than those now existing (Hoyt, 1989). While "high tech" job growth has been faster than average, such jobs are projected to make up only 1 out of every 25 new jobs created by 1995. Six of the top seven occupations with the largest projected employment growth do not require a college education: building custodian, cashier, secretary, general office clerk, sales clerk, and waiter and waitress (Biracree & Biracree, 1988).

Changes in work have also affected the family. Over half of the families in America include two wage earners,

and over half of the mothers of pre-school children are employed (Bureau of Census, 1986). More women are working for pay now than ever before. They comprise more than 45% of the labor force and will account for most of the new entrants in the future (Cetron & Appel, 1984). This trend of more women in the workforce and their movement into previously male-dominated careers is expected to continue (Cetron & Appel, 1984).

Hoyt (1989) summarized projections regarding the nature of the workplace in the year 2000, and included the influence of women and minorities. Specifically, five of every six new labor market entrants between 1986 and 2000 will be women, minority persons, or immigrants. Women and minority persons continue to experience discrimination in gaining full access to educational and career preparation programs, and therefore, can expect to encounter difficulties in gaining access to "high tech" jobs requiring higher education.

Faced with these many changes in the world of work, youth have indicated that they want more help with career planning than they are now receiving (Prediger & Sawyer, 1986). In addition to providing educational and occupational information, schools need to provide information about changes in the workplace, in families, and in society (Hansen & Minor, 1989).

It is impossible to predict which job skills will become essential and which will become obsolete, according

to Kimeldorf (1989). However, he contended that we can predict that the skill of finding or gathering useful information will remain an essential skill. The most essential information-gathering skill, he concluded, will revolve around the hunt for well-paid and fulfilling work.

Experts in the employment field at John Hopkins University conducted a survey of 1,912 employers nation-wide in 1984. The employers indicated that the traits they considered most essential for hiring and retaining high school graduates were dependability--coming to work regularly and on time, having proper attitudes about work, accepting supervision, and getting along with fellow workers (Crain, 1984). Therefore, preparation for a changing world needs to include exploration of careers to acquire essential information, reinforcement of work-related behaviors, knowledge of career fields, educational levels, and employment trends, delineation of proper work attitudes, and encouragement of career aspirations.

Career Theorists

Several career theorists outlined concepts pertinent to this study. To begin, Ginzberg (1951) and his associates concerned themselves with the developmental process of making a vocational choice. Their theory is based on the belief that each individual selects a particular occupation through the patterns of activities in which one engages throughout the formative years. They postulated three

distinct periods of occupational decision-making: fantasy choice (ages 6-11), tentative choice (early and late adolescence), and realistic choice (early adulthood). During the tentative phase, preadolescents make choices in relation to their interests (interest stage). Later, during the capacity stage, they include realistic elements (career knowledge) in their choices. They find places for themselves in society during the value stage, and anticipate work or higher education during the transition stage. Although little research exists to document the major premises of Ginzberg's theory (Shertzer & Stone, 1976), it signaled the beginning of the career development theories.

Holland (1973) considered personality type to be the major determinant of vocational choice. He contended that an individual resembles one of six basic personality types: realistic, investigative, artistic, social, enterprising, or conventional. The more closely one resembles a given type, the more likely one is to manifest the behaviors, competencies, interests, and personality traits which characterize that type. According to Holland, people choose work environments in which they can express and exercise their own particular personalities. A person's career aspirations, therefore, issue directly from these personal attributes. Because work environments can be described in terms of the kind of people who work in them, the best way to choose a career is to determine which job provides the best fit between personal style and the profile of personal

traits which characterize people in that occupation. Further, Holland surmised that the career counselor's role is an informational one; that is, helping students to acquire knowledge of how the work world is organized and how they can locate themselves in it.

The relationship of personality to career development was also emphasized by Tiedeman and O'Hara (1959, 1963). They viewed a career as providing opportunities for the expression of hope and desire (aspirations) as well as limitations upon life. An individual's thoughts and attitudes not only modify present experience but influence future experience as well.

Tiedeman and O'Hara (1959, 1963) designated the mechanisms of career development as "differentiation" and "integration." Differentiation, the separation of an aspect from larger considerations, results from visual perceptions, thoughts, feelings, and experiences. In other words, people develop their career and personal identities as they explore, make decisions, and integrate new understandings into their lives.

In his social-learning model of career selection Krumboltz (1979) suggested that career preferences, occupational skills, and an individual's selection of educational experiences, occupations, and fields of work are both the composite and consequence of many past and present experiences and the cause for anticipation of future experiences. These experiences may be classified into four

sets of interacting factors (a) genetic endowment and special abilities, (b) environmental conditions and events, (c) specific learning experiences, and (d) a set of "task approach" skills. Three distinct types of outcomes result from these interactions (a) self-observation, (b) task approach skills, and (c) actions (Krumboltz, Mitchell, & Jones, 1976).

Task approach skills may include work habits, mental sets (attitudes), perceptual and thought processes, performance standards and values, problem orienting, and emotional responses (Krumboltz et al., 1976). Krumboltz and Baker (1973) related the concept of task approach skills more specifically to career development. They specified "career development management" skills which include value clarifying, goal setting, predicting future events, alternatives generating, information seeking, estimating, reinterpreting past events, eliminating and selecting alternatives, planning, and generalizing. This theory implies that effective career counseling will involve teaching these different decision-making skills to students.

Rather than a single-choice, matching approach such as Holland's (1973) congruence theory, Super's (1984) conception of a career model is intended to denote a longitudinal, developmental approach. Super's stages of growth and exploration are the focus of this study, because they describe the developmental tasks of early adolescents.

Growth encompasses birth to age 14. During this period the self-concept develops through identification with key figures in family and school. Needs and fantasy are dominant early in this stage (birth to age 10), and interest and capacity become more important with increasing social participation and reality testing (ages 11-14). Children learn behaviors associated with self-help, social interaction, self-direction, industry, goal setting, and persistence. The tasks of this stage focus on (a) developing a picture of the kind of person one is, and (b) developing an orientation to the world of work and an understanding of the meaning of work (Herr & Cramer, 1988).

The middle school years, and eighth grade in particular, mark a transition point between the stages of growth and exploration. During the first part of the exploration stage (age 14) young people focus on self-examination, role try-outs and occupational exploration as they participate in school, leisure activities, and part-time work. By ages 15 to 17 students are expected to identify possibly appropriate fields and levels of work. Before these choices can occur, youth must successfully fulfill the tasks of the growth stage and reach a point of readiness for the tasks of exploration.

Gribbons and Lohnes (1968) used interviews to study eighth grade students' readiness for vocational planning. They first contacted 118 boys and girls in schools near Boston during their eighth grade year. They found that

readiness for vocational planning scores increased from the eighth to the tenth grades. However, eighth grade vocational planning scores were better predictors than tenth grade scores of the extent of educational and vocational planning, educational aspirations, post-high school career adjustment. They concluded that, for guidance purposes, readiness for vocational planning may be validly assessed as early as the eighth grade.

Super, Starishevsky, Matlin, and Jordaan (1963) investigated the behaviors and attitudes which foster specification of a vocational preference. Those which apply to early adolescence include (a) having an attitude of readiness, (b) developing a set of instrumental behaviors for coping with self and occupational exploration, (c) knowing the possible bases for vocational preference (i.e., intellect, interests, appropriate outlets, and alternatives), and (d) coming to terms with present-future relationships (i.e., the interrelationship between present activities and intermediate or ultimate vocational activities).

Similarly, Super (1983) postulated five dimensions important in adolescence as well as in midcareer (a) planfulness, or time perspective, (b) exploration, (c) information, (d) decision-making, and (e) reality orientation. He contended that though the content of decisions differs, decision-making principles are the same at any age and in dealing with any life stage.

The need for early adolescents to acquire knowledge and skills important to exploration and planning comes from their opportunities to engage in activities farther from home and independent from the family. Also, the nature of the schools affects their independent exploration. The eighth grade marks a formal choice-point. Choices must be made among specific courses, high school curricula, attendance at a particular high school or vocational technical school, and whether to remain in school at all. These choices accentuate students' sensitivity to work and its relevance to their lives (Herr & Cramer, 1988). Therefore, early adolescents face the tasks of exploring careers and options, gaining knowledge about themselves and different occupations, reinforcing their positive attitudes toward work, sharpening their work-related behaviors, and fostering their aspirations for future careers and lifestyles.

Five Basic Career Dimensions

The five basic career dimensions which are the focus of this study and the basis for the development of the Career Planning Readiness Inventory are (a) career information, (b) exploration, (c) work-related behaviors, (d) work attitudes, and (e) career aspirations. These dimensions are descriptive of the developmental tasks faced by middle and junior school students.

Career Information

An important basis for making career decisions according to Ginzberg (1951), Holland (1973), and Super (1983) is having information about of work and related educational requirements. Wehrly (1973) investigated the occupational information of fourth, sixth, and eighth graders. She found that students at all three grade levels had considerably more information about those occupations with which they had direct contact than those with which they had vicarious and limited contact. She concluded that personal or direct contact is of paramount importance in learning about occupations. She further suggested that there is a need for appropriate written and media resources for career information in the schools to help students learn about careers.

Otte and Sharpe (1979) examined the effects of a career exploration program on the self-esteem, achievement motivation, and occupational information of inner-city seventh graders. They reported that the experimental group who were exposed to the program significantly exceeded the control group on information about occupations, higher self-esteem, and achievement motivation.

Exploration of careers has been related to information about the world of work. Involvement in exploring careers, therefore, could increase information about careers.

Career Exploration

The importance of exploring careers or gathering information about careers has been emphasized by Krumboltz and associates (1976), Super (1983), and Tiedeman and O'Hara (1963). Career exploration is influenced by a person's attitude toward work, or the value given to it. Irwin and Smith (1956) found that people gather more information to attain important outcomes than to attain unimportant outcomes. Also, the salience of work can stimulate vocational exploration, according to Cooper (1976) and Lunneborg (1976). In addition, students' participation in exploratory activities may result in positive feelings about their occupational decisions (Barak, Carney, & Archibald, 1975).

Greenhaus and Sklarew (1981) surveyed undergraduate college students to investigate the factors which might influence participation in career exploration. They found that the importance of work in a person's life, or work-role salience, was positively related to participation in self-related and work-related exploration, and to the satisfaction they had in their occupational decisions. Therefore, the importance work has for people influences their involvement in career exploration activities and their satisfaction with the results.

Work-related Behaviors

The theories of Krumboltz (1976), Super (1963), and Tiedeman and O'Hara (1963) emphasize the importance of

developing effective work-related behaviors. In addition, Charner (1988) cited some of the reasons employers have for not hiring youth for entry-level jobs, including low grades, poor attitudes, lack of self-confidence, lack of goals, inability to express self, and lack of preparation for the interview. By contrast, the traits employers considered to be most important were being dependable, completing assigned tasks, following directions, having a proper attitude, and being a good team member.

Baxter and Young (1988) conducted a survey of more than 2000 administrators, teachers, graduates, and personnel directors from six Mississippi school districts to gain perspectives on the relationship between high school curriculum and student employment. The competencies considered necessary for successful employment included interpersonal skills, work attitudes and work-related behaviors. More specifically, work attitudes listed were dependability, cooperation, and diligence. Work-related behaviors included following directions, staying with a task until it is finished, reading and understanding, and solving problems.

Lotto (1986) recommended that students develop proficiencies in five areas to respond adequately to the constantly changing career scene. More specifically, students need to become proficient in (a) basic skills, (b) occupational skills, (c) world of work information, (d) work

values and attitudes, and (e) job-seeking, entry and maintenance skills.

Work-related Attitudes

The need for developing a positive attitude toward work has been supported by theory (e.g., Krumboltz, 1976; Super, 1963; and Tiedeman & O'Hara, 1963) and well-documented in the literature (e.g., Bhaerman & Spill, 1988; Fitzgerald, 1986; Lotto, 1986; Stump, 1986). Fitzgerald (1986) attempted to synthesize the research and discussion concerning the nature and quality of the connection between education and employment. She concluded that basic skills (i.e., literacy and computation) and general employability skills (i.e., work habits and attitudes) are prerequisites for success in any occupational endeavor, whatever the field and level of the job. She observed that significant numbers of workers lack appropriate affective and attitudinal bases for employment and job adjustment. It is this area, she contended, which is most amenable to training and development and should be a major goal of education.

Specific descriptions of these work-related behaviors and attitudes are needed to most effectively plan educational interventions. The Panel of Secondary School Education for the Changing Workplace (National Academy of Sciences, 1984) listed the following personal work habits and attitudes needed as core competencies by all future employees: realistic, positive self-concept; positive attitude toward work; pride in accomplishment; willingness

to learn; self-discipline (including punctuality, attendance, and dependability); goal-setting; time allocation; responsibility; self-motivation; and an understanding of the need for organization, supervision, and rules.

The relationship between work-related attitudes and behaviors was investigated by Fouad and Keeley (1992). They examined the relationship between career maturity as measured by the CMI (Crites, 1978a) and performance-related behaviors as measured by the Youth Competency Evaluation (Love & O'Hara, 1987) in a sample of 74 Black youth involved in a summer employment program. They found that the extent to which an individual is willing to compromise needs and reality was a successful predictor of youths' behavior in the areas of accepting authority, responsibility and self-initiative, getting along with co-workers, and safety. However, career-related attitudes did not predict attendance, punctuality, quantity of work, or quality of work. They concluded that although career maturity attitude scores for Black youth may be lower than for White youth, these scores are not necessarily related to poor work performance. Further, they observed that current measures of career maturity may not adequately tap into the attitudinal and cognitive tasks minority youth must accomplish to develop a self-concept and readiness for work.

Career Aspirations

Hopes, dreams, and plans about one's future occupation and lifestyle make up career aspirations and form a motivating force in career planning and decision-making. The theories of Holland (1973), Super (1983), and Tiedeman and O'Hara (1963) support the need for this future orientation. Super (1983) summarized a project which examined the nature of career development in the elementary and middle school years. He noted that a sense of autonomy, self-esteem, and future perspective are essential to planning, exploration, and acquisition of career skills and information.

Although Blau and Duncan (1967) suggested that the most influential forces on one's career attainment were father's occupation and education, Haller and Portes (1973) argued that the impact of social class could be overcome through affecting one's aspirations. Similarly, Vondracek and Kirchner (1974) investigated the vocational aspirations of children between the ages of three and six. Age comparisons suggested that one aspect of vocational development in early childhood involves mastery of the task of projecting oneself into the future and conceiving of oneself as one day achieving adult status which includes a vocational role. It follows that career aspirations might also be important among early adolescents. They might also need to project themselves into the future in terms of

occupational roles, educational pursuits, and anticipated lifestyles.

Research on career aspirations has often been associated with research on differences due to gender. Hackett, Lent, and Greenhaus (1991) reviewed vocational research from a 20-year perspective. They noted that much of the gender-based research from a counseling perspective has been concerned with predicting career aspirations, preferences, and choices. Early studies revealed a number of differences between men and women in work values, preferences, and stereotypical personality characteristics (Manhardt, 1972). However, more recent research has observed declining gender differences on such variables (Walker, Tausky, & Oliver; 1982). The most widespread conclusion at this time is that women and men are more similar than different in most work-related variables. Further, gender differences in work-related attitudes, perceptions, and behaviors are as likely to arise from factors in an organization or society as from the internal dispositions of men and women (Fagenson, in press).

Need for Career Education and Development

The implication of the economic and occupational changes most pertinent to career development education is that of transforming society from one of predetermined occupations into one of choice for the individual (Drucker, 1973). Therefore, the need arises for continuing, lifelong

education to keep workers informed and technically current (Cianni-Surridge, 1983). These changes create new human needs as well. The increase in technology and information flow bring concomitant needs for human interaction. In other words, "high tech" increases the need for "high touch" (Naisbitt, 1982).

Traditional approaches to career assistance began as a response to helping immigrants adjust to an industrial society (Hansen, 1987). The process usually involved helping them obtain information about themselves and about occupations, and then helping them to find the jobs that matched them. It was assumed that people and society did not change. Therefore, a person would keep one occupation for life.

As a result of the theories of Ginzberg (1951), Super (1953, 1957), Tiedeman and others (1959, 1961, 1963) the thinking within this field expanded. Assumptions regarding vocational decisions enlarged to include the concepts of life choices, roles, values, transitions, and career decision-making processes. More recently, in response to educational reform following Sputnik and the career education movement, career programs in schools have focused on career development as a lifelong process of making choices and decisions at different stages

Measuring Career Development

A search of recent Mental Measurements Yearbooks (Conoley & Kramer, 1989; Mitchell, 1985) under the headings of vocations and careers revealed five instruments for measuring career development. Kapes and Mastie (1988), in A Counselor's Guide to Career Assessment Instruments, listed the same five career development instruments as well as one additional test designed specifically for adults. The measuring devices which were designed for use with adolescent students were: Assessment of Career Decision Making (ACDM) (Buck & Daniels, 1985; Harren, 1979), the Career Decision Scale (CDS) (Osipow, Carney, & Barak, 1976), the Career Development Inventory (CDI) (Super, Jordaan, & Myers, 1981; Super, Thompson, Lindeman, Myers, & Jordaan, 1981), the Career Maturity Inventory (CMI) (Crites, 1978a), and My Vocational Situation (MVS) (Holland, Daiger, & Power, 1988). Of these instruments only Super's CDI and Crites's CMI purport to be suitable for use with students as young as eighth graders.

The Career Maturity Inventory

The Career Maturity Inventory (Crites, 1978a) was both the most widely studied measure of career maturity, according to Betz (1988), and the measure most closely tied to a well-developed theory of the component parts of the career maturity construct. Crites (1974) defined career maturity in terms of what a person chooses and how the choices are made. His model and inventory both included two

sets of process variables (a) career choice competencies, and (b) career choice attitudes.

The CMI Competence Test was designed to measure the degree to which an individual possesses the career information and the planning and decision-making skills to make realistic and wise educational and career decisions. It includes five subtests of 20 items each: self-appraisal, occupational information, goal selection, planning, and problem solving.

Internal consistency reliability estimates (KR-20) as reported in the manual ranged from .72 to .90 for samples of 6th through 12th graders. Convergent validity correlation estimates between the total scores of the CMI and Westbrook and Parry-Hill's (1973) Cognitive Vocational Maturity Test (CVMT) ranged from .62 to .77.

The CMI Attitude Scale measures five aspects of attitudes toward careers and career choices. They include decisiveness in making a career choice, active involvement in the process, independence in decision-making, realistic orientation toward work, and the ability to compromise between needs and reality. However, the CMI yields only a total score.

Internal consistency reliability estimates (KR-20) for the CMI averaged .74 across grade levels, and test-retest reliability measures of .71 over a one-year interval were reported. Evidence of criterion-related validity was rather weak. Correlations with other measures of career maturity

were reported in the .20s and .30s (Katz, 1978). In terms of construct validity, scores on the CMI Attitude Scale seem to be related to general intellectual ability; obtained correlations between the CMI and ability measures were reported to be .40 and higher.

Katz (1978) criticized the response format of both scales of the CMI. He faulted the Attitude Scale for its true-false format and its negative keying of all but 7 of its 50 items, which might lead to response bias. He also criticized the Competence Test, because it allowed the test-taker to choose the moderate response without reading the stems.

Although Crites (1974) reported Dale-Chall (1948) reading levels between fifth and sixth grade for both scales, the Competence Scale requires more advanced reasoning ability. Another drawback is the time of administration, 30-40 minutes for the Attitude Scale and two and one-half hours for the Competence Scale. Therefore, its use with middle school students is limited.

Career Development Inventory

The Career Development Inventory (Super et al., 1981) is a 120-item scale which uses a multiple-choice format to assess four of the five dimensions of Super's model of career maturity, specifically, Career Planning (CP), Career Exploration (CE), Decision-Making (DM), World of Work Information (WW). The CDI does not assess reality orientation, the fifth dimension; instead, it assesses

Knowledge of Preferred Occupational Group (PO). In addition to the five specific scale scores, the CDI provides combined scores for attitudes, knowledge, and total score.

Internal consistency (coefficient alpha) reliability estimates ranged from .68 and .67 for PO and DM, respectively, to .89 for WW. Because of its low reliability, the authors excluded PO from the calculation of the total score and from some of the statistical analyses. Stability coefficients over a 3-week interval were reported to be in the .78s and .80s for the combined scores and scale CP, but in the .60s and .70s for the other individual scales.

The content validity of the CDI was based on its theoretical base and the use of experts to develop its test items. Evidence for construct validity was based on the score differences between younger and older students and on the correspondence of the obtained two-factor structure to theoretical prediction, that is, attitudinal and cognitive subscales. Although some data were reported in the manual regarding the relationships of CDI scores to themselves and to other variables, Betz (1988) observed that there continues to be a lack of traditional criterion-related validity evidence.

The use of the CDI with middle school students is limited. Although it is designed for use in grades 8 through 12, national norms are not available for grade 8. According to Super and associates (1981), the Knowledge of

Preferred Occupational Group subtest is suitable for grades 11 and 12, but it is too difficult for many students in grade 10 and below. In addition, the CDI focuses on the developmental tasks of exploration, specifically, identifying appropriate fields and levels of work. Before these choices can occur, youth need to reach a point of readiness, having successfully fulfilled the tasks of the growth stage. Specifically, they need to have sufficient bases of self-knowledge and career awareness to be ready to explore careers.

Other Career Assessment Instruments

There were several other career assessment instruments which warranted discussion in relation to the need for a new measuring device for middle school students. The Cognitive Vocational Maturity Test (CMVT) (Westbrook & Parry-Hill, 1973) differed from the CMI and the CDI in that it emphasized only the cognitive dimension of career maturity. Also, it was appropriate for students in grades 6 through 9. The underlying assumption of the CVMT was the central importance of occupational information in making good career choices. Knowledge of the world of work was seen as important as self-knowledge to the process of finding satisfying occupations. The CVMT contained 120 items that provide scores according to the number answered correctly. The CVMT has not been commercially published. Many of its ideas were incorporated into large-scale testing programs such as the American College Testing's Assessment of Career

Development (ACD), which is no longer available, and the College Entrance Examination Board's Career Skills Assessment Program (CSAP).

Fadale's (1974) Career Awareness Inventory assessed knowledge of occupational information using a picture format. Accompanied by a teacher's manual rather than a technical manual, it omitted details of the test construction process and the instrument's relationship to a theoretical base. Also, the manual lacked norms. Other factors which limited its usefulness in a school setting were its length (125 items) and the gender and racial biases expressed in the occupational pictures.

Although not an instrument for assessing career maturity, Holland's (1985) Self-Directed Search (SDS) deserved some attention here due to its theoretical base and research support. The SDS was designed to be a self-administered, self-scored, and self-interpreted guide for high school students and adults desiring career planning assistance. Its development was based on the premise that individuals are more likely to experience greater success, stability and satisfaction in their occupations if the work environment suits their personalities.

Individuals complete the assessment booklet and score the subtests to determine their own three-letter occupational code. This resultant code is used to search the entries in the Occupational Finder. The SDS can be a

stimulus for career exploration and an adjunct to vocational counseling.

Other instruments were designed during the "career education" years when federal funds supported development of career-focused programs nationwide, such as the New Mexico Career Education Test Series (1973) and the Career Education Cognitive and Affective Questionnaires (Smith, 1975). However, it appears that in recent years neither the career education programs nor the instruments developed have continued to receive the support of funding or research. Therefore, the instruments available for assessing career development have limitations in their usefulness with middle school students.

Middle School Years

The middle school years mark changes in the abilities, needs, and outlooks of adolescents. These students are more able than elementary school age children to comprehend relationships and to use abstract terms and symbols. They are preoccupied with belonging and conformity, being greatly influenced by peers of the same and opposite gender. They also begin taking steps toward independence from their families (Herr & Cramer, 1988).

Middle school students continue to develop, refine, and strengthen the basic skills begun in elementary school, while they begin to narrow their focus on the more specialized experiences of high school. They begin to shift

their time perspective from the immediate present to the future. Their sensitivity to work and its personal relevance is accentuated as they face the choices of curricula and other plans for high school. Jordaan and Heyde (1979) observed that as students pursue a given curriculum, they increase the probability of being admitted to or excluded from certain fields of work and training programs, whether they realize this or not.

Herr and Cramer (1988) observed that school is work at the middle school level. It is important, therefore, to use the personal encounters with the different content and context of courses to explore present and future alternatives. Intensive exploration can be expected during this time, whether the school aids it or simply allows it to proceed (Stamm & Nissman, 1973). Students make compromises and check the congruence or incongruence between aspirations and expectations during this period (Perrone, 1973).

This is a time when change in the self and the world can be used as a focal point for planning. Student responsibilities through participation in planning can be related to the consequences of decisions. The research of Campbell and Parsons (1972) has shown that the majority of middle school students exhibit a readiness for vocational planning. There is a need, however, to assess that readiness for career planning and identify those students who are less ready or who are deficient in attitudes and behaviors essential to career planning.

Recently, the "at-risk" student has received attention. Well over one-quarter of the nation's youth never finish high school (Committee for Economic Development, 1985). Much higher estimates exist for urban areas, where dropout rates have been reported in the 40-50 percent range (Barber & McClellan, 1987). For minorities, the risk is even higher. Dropout rates as high as 85 percent for Native Americans and 70-80 percent for Puerto Ricans have been reported in studies by the Institute for Educational Leadership (1986).

In view of the rapid changes in our society and the world of work, all students are at risk. The challenge is to provide youth with the programs and experiences which can strengthen their self-concepts and foster their understanding of the connections between school and work. School can provide the basic and occupational skills which can lead to more fulfilling careers. However, students still have the power to choose whether to attend mentally, emotionally, and physically.

Summary

The constantly changing world of work continues to challenge educators and school counselors to help prepare students for making career and life decisions. There is an increasing need for career development education to focus on the specific areas of career information, career exploration, work-related behaviors, positive attitudes

toward work, and career aspirations (Ginzberg et al., 1951; Holland, 1973; Krumboltz et al., 1976; Super, 1983; Tiedeman & O'Hara, 1963).

The middle school years mark a transition point in the physical and emotional development of students as well as in their career development (Herr & Cramer, 1988). Early adolescents' readiness for career planning needs to be assessed so that career programs and counseling can focus on their particular developmental needs. Yet, a suitable instrument is not available to assess readiness for career planning at this age. Therefore, the CPRI was developed to help assess middle school students' career planning readiness in order for teachers, parents, and counselors to plan effective interventions related to adolescents' career development needs.

CHAPTER THREE METHODOLOGY

The need for workers who are prepared to meet the challenges of the rapidly changing workplace has focused attention on the preparation students receive in school. Schools meet the challenge by requiring students to make career-related decisions earlier, tentatively choosing their occupational fields, and planning their high school programs by the end of eighth grade.

Educational decision-makers and students need diagnostic information which pinpoints areas of need in career development so that they can responsibly plan programs in career development education and administer appropriate interventions. They also need effective ways of measuring changes in levels of career development to determine whether interventions are effective.

Currently, instruments for assessing the specific needs of early adolescents in regard to their readiness for career planning are not available. This deficiency necessitated the development and validation of a suitable measuring device.

The first portion of this chapter contains a description of the methodology which was used in the initial development, field testing, and refinement of preliminary

forms of the Career Planning Readiness Inventory (P-CPRI). This is followed by a description of the procedures by which the refined instrument (CPRI) was examined for reliability, validity, and factor structure, as well as its relationships to demographic variables of the subjects. The inherent methodological limitations of the study are discussed at the conclusion of the chapter.

Development of the CPRI

An analysis of the literature reviewed in Chapter Two led to recognition of the need for developing an instrument to assess readiness for career planning with middle school students. Career development and career maturity have been discussed among other constructs, by Super (1983, 1984), Crites, (1974), Herr and Cramer (1988), Walsh and Osipow (1988), and Brown, Brooks, and associates (1998). The need for appropriate assessment instruments for middle school students became apparent from the career development literature. Also, the basic elements of career development which applied to this age group became more clearly defined.

Identifying the Basic Dimensions

A review of career development theory revealed five dimensions which consistently emerged as important for early adolescents. Super's (1983) model of career development was the starting point for developing a model of career planning readiness for middle school students. His model emphasized planfulness, exploration, information, decision making, and

reality orientation. Critiquing the elements which composed these five categories revealed that some adjustments were needed to create a model of career development that would fit middle school students. Super's model was based on the tasks of the exploration stage, namely, crystallizing and specifying a vocational preference. Because middle school students are not ready for these tasks, the literature was reviewed to delineate the tasks for which they were ready. From this perspective emerged the career dimensions of exploration, career knowledge, work-related behaviors, work-related attitudes, and career aspirations. Next, the dimensions were operationally defined; that is, the thoughts, feelings, and behaviors which might compose each dimension were drawn from the literature and listed as descriptors, or subcomponents, of the dimensions.

Career Planning Readiness Dimensions

The first stage of test construction involved incorporating the five dimensions of career development and their descriptors into a conceptual outline (see Table 1) from which the items were generated.

Each of the five dimensions which compose career planning readiness, namely, exploration, work-related behaviors, knowledge, attitude, and aspirations, are discussed in this section in terms of meaning, associated attitudes, behaviors, and feelings.

Table 1

Components of Career Planning Readiness

- I. Career Exploration
 - A. Exploration
 - 1. Talk with people
 - 2. Read about occupations
 - 3. Visit job sites
 - B. Self-evaluation
 - 1. Interests
 - 2. Values
 - 3. Abilities

 - II. Work-related Attitudes
 - A. Diligence
 - B. Adaptability
 - C. Responsibility
 - D. Willingness to learn
 - E. Values/takes pride in work
 - F. Trustworthiness

 - III. Work-related Behaviors
 - A. Attends class
 - B. Is punctual
 - C. Brings study materials
 - D. Participates in discussions
 - E. Pays attention/listens
 - F. Follows directions
 - G. Starts assignments
 - H. Completes assignments
 - I. Cooperates
 - J. Works independently

 - IV. Career Knowledge
 - A. People, data, things
 - B. Educational and training requirements
 - C. Opportunities for advancement
 - D. Occupations on increase or decline
 - E. School subjects as preparation

 - V. Career Aspirations
 - A. Lifestyle
 - B. Plans for the future
 - 1. Immediate--school
 - 2. Intermediate--after high school
 - 3. Distant--career
 - C. Feelings of anticipation
-

Career exploration. The first dimension of career planning readiness is exploration, or involvement in planning for the world of work. Sub-components include career exploration and self-evaluation. Exploration refers to discussions of career plans with friends, parents, teachers, and school counselors; researching occupations; interviewing people about their jobs; and visiting job sites. Self-evaluation includes understanding of one's own interests, values, and abilities, and how these attributes affect career choices.

Work-related attitudes. The second component of career planning readiness is attitudes toward the world of work. Sub-components include diligence, adaptability, flexibility, responsibility, willingness to learn, trustworthiness, and valuing work.

Work-related behaviors. The third component of career planning readiness is school behaviors related to the world of work. Sub-components include attending class, being punctual, bringing study materials, participating in discussions, paying attention, following directions, starting assignments, completing assignments, cooperating with others, and working independently.

Career aspirations. The fourth component is aspirations for the world of work. Sub-components include plans for the future (immediate, intermediate, and distant), educational goals, lifestyle visions, and anticipation of future careers.

Career knowledge. The fifth component is information related to the world of work. Sub-components include information about categorizing occupations (people, data, things), educational and training requirements, employment trends, use of leisure, and benefits and advancement opportunities.

Related Items

An item pool of 50 items (10 items for each of the five dimensions) was constructed based upon careful examination of the definition of career planning readiness and its components. Items were written or adapted from previously available materials on career development to logically and rationally reflect the characteristics of career planning readiness indicated by the dimensions.

Format

A five-point, Likert-type response scale was selected for the first, second, third, and fourth components, Career Exploration, Work-related Attitudes, Work-Related Behaviors, and Career Aspirations, respectively, because of its familiarity to subjects and ease of resultant data manipulation. The five responses on the preliminary form were Strongly Agree (SA), Agree (A), Not Sure (NS), Disagree (D), and Strongly Disagree (SD), with weights ranging from 5 (high) to 1 (low). Twenty percent of the items were phrased negatively in random order to avoid formation of a response set by the subjects. Score weights were reversed for negatively phrased items.

High scores on these components indicated desirable amounts of (a) involvement in career exploration (b) positive attitudes toward work, (c) work-related behaviors, such as taking responsibility and promptness, and (d) positive aspirations toward future lifestyles and careers. Low scores suggested deficiencies in these areas. Of course, each item yields valuable information for specifying particular needs for career development intervention.

A multiple-choice format was chosen for the fifth dimension, Career Knowledge, which focused on the world of work. This component requires a knowledge base in order to answer the items correctly. Higher scores denoted a broader base of knowledge about occupational and educational requirements, employment trends, and the work world. Lower scores indicated the need for more information about the world of work.

The original item pool for all five components was reviewed by professors in school counseling, school guidance counselors, and school teachers. Their feedback was used to further refine the instrument. Items which did not appear to reflect the dimensions of career planning readiness, or which were ambiguous, were omitted or reworded. The resultant item pool consisted of 10 items per component for a total of 50 items.

The second stage of test construction involved administering the preliminary form to a sample of subjects

to ascertain the clarity of the instruments' directions and items, and estimate the time required for administration.

Preliminary Studies

Three groups of subjects were chosen for inclusion in the preliminary (pilot) studies. They were similar to, but not fully representative of, the samples which were selected for studying reliability and validity of the instrument in the larger research study.

Group I was composed of 52 fifth grade students enrolled in an elementary school in Alachua County, Florida. Group II was composed of 10 eighth grade students enrolled in a middle school in Citrus County, Florida. Group III included 107 seventh grade students also enrolled in a Citrus County middle school. These classes were chosen in order to sample responses of students from various backgrounds and from levels representing the various grades for which the instrument was designed. The investigator, a graduate assistant, and a classroom teacher administered the instrument in the classrooms to students from whom parental consent was obtained.

The preliminary forms of the CPRI were administered to 169 students. The criterion for inclusion in the analysis was completion of all items, including demographic data. Students completed the P-CPRI and gave verbal feedback to the test administrators. The teacher and graduate assistant also provided feedback to the investigator.

The test administrators read the directions aloud to the classes and asked if there were any questions. Students recorded their responses to the P-CPRI on hand-scoreable answer sheets. The time required for administering the inventory was approximately 25 minutes.

Feedback from the teacher, graduate assistant, and students was reviewed regarding the clarity of the instrument and suggestions for changes. Means and standard deviations for the items were calculated. Adjustments were made to the developmental form of the instrument as indicated by the results of the analyses.

Group I, composed of 52 fifth grade students was administered the P-CPRI Form I. The first form of the P-CPRI was composed of 65 items covering five areas of career development (a) career planning, (b) positive work attitudes, (c) positive work behaviors, (d) information about the world of work, and (e) aspirations for the world of work. The subscales were scored as follows (a) Career Planning was marked True or False, giving each True answer a value of 2 points and each "False" answer a value of 1 point; (b) Positive Work Attitudes, (c) Positive Work Behaviors, and (e) Career Aspirations required responses to a Likert-type scale, and were scored by giving the following points accordingly: "Not at all like me" - 1 point, "Not much like me" - 2 points, "Like me" -3 points, "Very much like me" - 4 points; (d) Information about the World of Work

required response to a multiple choice format, which was scored zero for an incorrect response and one for a correct response.

The possible range of scores on the P-CPRI Form 1 was 55 to 204. The actual range of scores received by the fifth grade students was 76 to 189. The mean total score for Group I on the P-CPRI was 154.58, with a standard deviation of 21.79. Independent t -tests by gender on the five subscales were calculated. None of the five t -tests were statistically significant. Therefore, for Group I there were no significant differences in levels of career development which could be attributed to gender differences.

As a result of this pilot study with fifth grade students, the P-CPRI was shortened to 50 items; more specifically, it was shortened to 10 items for each of the five areas of career development. Group II, composed of 10 eighth grade students in a dropout prevention class was administered the P-CPRI Form 2. Their mean total score was 94.4, with a standard deviation of 17.77.

Refinements of the CPRI

Students in Groups I and II had difficulty with the multiple choice section of the P-CPRI, World of Work Information, due to its more difficult vocabulary and information base. Therefore, to more accurately reflect the purpose of this career development inventory (which is to assess students' readiness for career planning), the World

of Work Information subscale was revised from a multiple choice response format to Likert-type responses. This change also made all of the items parallel in format, and therefore amenable to the same type of factor analysis.

In addition, other alterations to the CPRI were made. More specifically, the number of items for each subscale was increased to 12, for a total of 60 items. Increasing the length of an inventory potentially increases its reliability as well as providing more items from which to derive the underlying factors. Changing the more difficult multiple choice items to the Likert-type response format also made it possible to lengthen the instrument without requiring more time for completion. Twenty percent of the items were reworded from positive to negative presentation for the purpose of reducing the likelihood of a response set. The items were then arranged in random order so that items pertaining to each dimension did not occur in sequence. The outline of the CPRI items across the five career dimension is shown in Table 2. The final form of the CPRI appears in the Appendix A.

This final form of the CPRI was administered to a third group of students to check the administration procedures, students' comprehension of the directions, and the time required for administration of the inventory, as well as to examine the means, standard deviations, and item variances. Group III was composed of 107 seventh grade

Table 2

CPRI Items Across Five Career DimensionsI. Career Exploration

Item	Content
4	I have talked with my parents about jobs and my future.
7	I have had successful talks with my school counselor about my plans for high school.
12	I am aware of how my interests and skills match jobs.
17	I have talked a lot with my friends about our career plans.
21	*I have hardly thought about which classes will prepare me for the occupation I want.
23	I have received a lot of useful information about careers from the library.
34	*I have learned very little about careers by writing a career report for class.
35	I bring my study materials to class regularly.
38	It has been very helpful to interview someone who has a job I want to have in the future.
39	I have learned a lot about different jobs by visiting job sites.
40	I have some ideas about which jobs fit my interests.
51	I have had some very good talks with my teachers about the education needed for different occupations.
52	I am aware of the effect my strengths and weaknesses have on my career choices.

II. Work-Related Attitudes

Item	Content
5	You can count on me to do what is right.
10	Helping others is important to me.
15	I respect the rights and opinions of others.
19	I am open to suggestions for improving what I do.
25	I admire people who work and have jobs.
27	Honest work has value in itself.
30	*I doubt that I can reach my goals.
37	*I usually quit a task before it is done.
47	I take responsibility for what I do.
48	I am determined to do well.
57	*I get upset when something happens that I didn't count on.
61	I am proud of what I do.

*Negatively worded item

Table 2, continued

III. Work-Related Behaviors

Item	Content
9	I come to school even though I don't always feel like it.
11	I follow directions to complete a task.
20	*When class assignments are given, I barely listen.
24	I usually start to work on an assignment right away.
28	I am usually on time for school.
35	I bring my study materials to class regularly.
36	Once I know what to do, I work independently to complete my assignments.
41	I stick with a school assignment until it is done.
42	I organize my study time to work effectively.
45	*I usually turn my homework in late.
58	I usually participate in class discussions.
60	*I usually disobey school rules.

IV. Aspirations for the World of Work

Item	Content
3	I like to imagine the career track I will take.
13	I see myself making a contribution to society through the work I will do.
16	I get excited about the opportunities in my future.
18	I know what kind of work I want to do in the future.
26	I look forward to making choices about my career.
31	I dream about the kind of life I'll have when I grow up.
32	I can see myself being successful in a job.
33	I know what I want to do when I graduate from high school.
43	I can picture myself graduating from high school.
49	I look forward to learning about the job I want.
54	I envision the lifestyle I will make for myself in the future.
56	When I think of my future, I get excited.

* Negatively worded item

Table 2, continued

V. Career Information

Item	Content
2	I am aware of what employers look for when they hire people.
6	I am aware of the kind of job openings which are going to decrease in the future.
8	*I don't know the kinds of jobs which will have more openings in the future.
14	*I am unsure about ways to find and get a job.
22	I know which jobs have the best opportunities for career advancement.
29	I am aware of how education relates to well paying jobs.
44	I can easily classify jobs into groups according to data, people, and things.
46	*I have trouble locating information about careers in my school library.
50	I am familiar with the guidance resources for career and college exploration.
53	*I have difficulty matching jobs with the education required for them.
55	I have an idea of what colleges offer and the degrees they give.
59	I am aware of the relationship between resumes and job interviews.

*Negatively worded item

students. A classroom teacher administered the CPRI to students in her English classes and provided feedback regarding the directions, administrative procedures, and time needed.

Students' total scores on the CPRI ranged from 82 to 180. The possible range was 60 to 300. The mean for the total score was 125.20, standard deviation 21.44, and standard error of the mean 2.16. The mean for males ($n = 50$) was 126.20, and for females ($n = 49$) 124.18. A t -test

was calculated to determine if the differences due to gender were statistically significant. The t -value of .4657 ($df = 48,49$) was not statistically significant at the .05 level of confidence. Therefore, for Group III there were no significant differences in levels of career development which were attributable to gender.

The item and total score means, standard deviations, and standard error of the means are shown in Appendix B. The results of this pilot study seemed to verify that this form of the CPRI provided sufficient variance to proceed with administering the instrument to a larger sample for additional statistical analyses.

Test construction, or scale development, consists of collecting data using a preliminary form of the instrument under development, and analyzing the data to select items for the revised form (Crocker & Algina, 1986). The items were checked for variability across items, eliminating those which did not discriminate among subjects.

The reading level of the CPRI items was checked by several methods. Reading level can be evaluated on the basis of length of sentences, number of syllables, and number of unfamiliar words (Fry, 1968). An initial analysis was made by submitting the 60 items to an evaluation by RightWriter, a computer software program designed to assess reading level as well as grammatical constructions. RightWriter is based upon the Flesch Readability Formula (1948). The readability level of the CPRI was determined to

be 5.62. Therefore, according to this indicator students need a sixth grade level of education to understand the CPRI. To further check the reading level, the items were evaluated using the Flesch Index (1948), a non-computer analysis. The Flesch Index of 74.436 indicated that the CPRI was classified as "fairly easy." A score of zero would mean the text was practically unreadable, and 100 would mean the text was easy for any literate person (Flesch, 1948). These analyses verified that the readability of the CPRI was appropriate for eighth grade students.

Reliability and Validity of the CPRI

Before evaluating validity, the CPRI must be evaluated to determine how consistently, or reliably, it performs as a measuring device. To be a valid measure of career planning readiness, the CPRI must be a reliable measure of the general construct and of its five dimensions.

The CPRI was evaluated for internal consistency (Cronbach alpha coefficient) of the total scale. The stability of measurement, or the extent to which the CPRI yields the same or nearly the same score for an individual tested on occasions separated by period of two weeks, was evaluated by test-retest reliability (Pearson correlation coefficients). Career development characteristics are expected to be stable over several weeks or months, with noticeable developmental changes occurring only over periods of one or more years (Thompson & Lindeman, 1984).

An essential characteristic of a measurement device is how well it measures what it is intended to measure. The CPRI was evaluated in terms of construct validity, content validity, and concurrent validity. In regard to construct validity, the CPRI should be comprised of items that qualified judges view as dealing with those variables that were to be measured. The items in the CPRI were based on research work on the nature and assessment of career development and have been drawn from the basic work on this topic by Super (1983).

To establish the content validity of the CPRI, the items were examined to confirm that they reflected the five dimensions of the career development model. More specifically, twenty-four graduate students in a class in Counseling for Career Development at the University of Florida (Spring 1991) classified the 60 items of the CPRI into five categories; namely, career exploration, work-related attitudes, work-related behaviors, career aspirations, and world of work information. The results of their classification can be seen in Table 3. Items were considered to be clearly aligned with the theoretical dimensions if 67 percent of the tallies fell under one category. Subsequently, 42 of the 60 items were clearly defined, specifically, items 2, 3, 5, 6, 8, 11, 14, 15, 16, 18, 19, 20, 22, 23, 24, 25, 27, 28, 29, 31, 33, 34, 35, 36, 38, 41, 42, 43, 44, 45, 48, 50, 51, 53, 54, 57, 58, 59, 60, and 61. Therefore, these items support the content validity

of the five theoretical dimensions of the CPRI. The remaining 18 items were less clearly defined due mainly to difficulty in distinguishing between (a) career exploration and career aspirations (#4, 17, 21, 49), (b) career exploration and work-related behaviors (#7), (c) career exploration and career information (#12, 39, 40, 46, 52, 55), (d) work-related attitudes and work-related behaviors (#9, 10, 47), and (e) work-related attitudes and career aspirations (#13, 26, 30, 32). Even though the classification of these 18 items was ambiguous, they were retained with the intent that factor analysis would clarify empirically the theoretical dimensions with which they aligned.

To further evaluate the content validity of the CPRI, the CPRI items were evaluated by a panel of experts which included representatives of the Florida Educational Research Council, a district-level Director of Testing and Evaluation, a district-level Coordinator of Career Development Services, and five other authorities in the areas of psychometric construction, curriculum development, and counseling. They reviewed the items for accuracy, relevance to the components, technical quality, grammar, potential for offensiveness, and appearance of cultural or gender bias. Revisions of the items were made based upon their feedback, and the final draft of the CPRI can be found in the Appendix A.

Table 3

Classification of CPRI Items

Item	A	B	C	D	E
*1					
2	—	—	4	—	19
3	6	1	—	17	—
4	12	1	3	8	—
5	1	19	4	—	—
6	2	—	—	1	21
7	15	—	6	3	—
8	2	—	—	1	21
9	—	8	15	1	—
10	1	15	6	2	—
11	—	2	22	—	—
12	12	1	—	1	10
13	1	11	1	11	—
14	3	2	2	—	17
15	—	22	2	—	—
16	1	6	—	17	—
17	11	1	2	10	—
18	6	—	—	16	2
19	1	20	3	—	—
20	—	1	23	—	—
21	6	—	4	9	4

* #1 was a sample item, and was excluded from the analyses.

Table 3, continued

Item	A	B	C	D	E
22	4	—	—	1	18
23	18	—	3	—	3
24	—	1	23	—	—
25	—	24	—	—	—
26	3	8	—	13	—
27	—	24	—	—	—
28	—	—	24	—	—
29	3	—	—	1	20
30	—	15	—	9	—
31	2	—	—	22	—
32	—	11	—	13	—
33	3	—	1	19	1
34	18	1	2	—	3
35	—	—	24	—	—
36	—	1	23	—	—
37	—	—	24	—	—
38	19	1	1	—	3
39	14	1	1	—	8
40	11	1	—	3	9
41	—	—	24	—	—

Table 3, continued

Item	A	B	C	D	E
42	—	1	23	—	—
43	—	2	—	22	—
44	2	1	3	—	18
45	—	—	24	—	—
46	15	1	3	—	5
47	—	11	13	—	—
48	—	22	1	1	—
49	9	4	1	10	—
50	16	—	—	—	8
51	16	—	2	1	5
52	12	2	—	—	9
53	5	1	—	—	18
54	—	—	—	24	—
55	12	—	—	1	11
56	—	3	1	20	—
57	—	16	8	—	—
58	—	1	23	—	—
59	4	—	—	—	20
60	—	2	22	—	—
61	—	24	—	—	—

Construct validity is the extent to which an instrument measures a well-defined psychological construct. If a measurement device truly measures the intended construct, the instrument should exhibit predictable characteristics. Evidence of the CPRI's construct validity was based on subgroup differences, such as gender, and on the factor structure of the instrument. Basic career development would predict minimal differences attributable to gender and increases in scores due to grade level progression (Thompson & Lindeman, 1984). In order to test for reliability and validity, data were collected and analyzed from 3727 seventh, eighth, and ninth grade students who participated in a research study wherein they were administered the CPRI.

Research Methodology

The revised form of the CPRI was administered to 3727 students. After eliminating incomplete protocols the remaining students were randomly assigned by computer in a 75-to-25 ratio to Group I ($n = 2819$) for initial statistical analyses and Group II ($n = 916$) for cross-validation of the factor structure. The purpose of this administration of the CPRI was to (a) study and refine the instrument, (b) determine its reliability, validity, and factor structure, and (c) evaluate the replicability of the factor structure. For item analysis, the minimum number of subjects is five to ten per item (Nunally, 1978); however, 18 subjects per item

is recommended for factor analysis (Crocker & Algina, 1986). Therefore, samples of 2819 and 916 students were more than adequate for the purposes of this study.

Population and Sample

The population for the focus of this study consists of middle school students in public schools. Middle schools are usually composed of grades six, seven, and eight, with slight alterations in grade level due mainly to constraints in the physical plant. Eighth grade students are the "seniors" of the middle schools, receiving the prestige that accompanies being the oldest in that setting, but also feeling the pressures associated with early adolescence.

Eighth grade students in public schools in Florida typically range in age from 13 to 15 years. Of this group, 63% are Caucasian and 37% are of ethnic origin; 52% are male and 48% are female. The economic status of their families is denoted by 33% receiving lunches at free or reduced rates. Sixty-seven percent of the students do not receive lower lunch rates (Williams, 1986). To qualify for reduced lunches, a family of four may earn a maximum annual salary of \$24,790. For free lunches, a family of four may earn no more than \$17,420 yearly (S. Poe, personal communication, January 15, 1992).

Sampling Procedures

The CPRI was administered to 3727 public school students from five schools in Hillsborough County, Florida in April 1991. Hillsborough county is a large metropolitan

area whose school population represents the statewide school population in terms of gender, ethnic origin, and income. The intent of the sampling procedure was to approximate the population of middle school students in general.

By computer selection 75 percent of the students were randomly assigned to Group I for the initial statistical analyses, and 25 percent were randomly assigned to Group 2 for cross-validation of the instrument. Group I was composed of 2819 students whose data were used for reliability (test-retest) study, analyses of internal consistency reliability, analyses of subject variables, and factor analyses of the instrument. Group II was composed of 916 students whose data were used to establish cross-validation of the factor structure of the instrument (Crocker & Algina, 1986).

A description of this research proposal was submitted for review and approval to the University of Florida Institutional Review Board. Approval was granted, and the study proceeded as planned.

To secure permission to gather data for the study in Hillsborough county, the Director of Testing and Evaluation, the Coordinator of Career Development Services, and the Principals and Teacher-Advisor Coordinators at each school proposed for participation were contacted. The study was described, and the potential benefits outlined. The results were to be shared with them. Permission for the research

was granted, and specific dates and administrative details were worked out.

Specific schools and grade levels were selected for participation in the data collection in consultation with the county administrators. Participation of five public schools in Hillsborough county was secured, with each school supplying from 30 to 40 classes of 20 to 25 students each.

The instrument was administered during Teachers as Advisors time in each of the participating schools. This is a regularly scheduled period for large group guidance when students meet with teachers-advisors in classroom groups.

Resultant Samples

Group I included 2019 students of whom 47.4 percent were male ($n = 957$) and 52.6 percent were female ($n = 1062$). There were 757 seventh graders, 629 eighth graders, and 633 ninth graders. Students ranged in age from 13 to 16 years. Those beyond the specified range were excluded from the study. Classification by ethnic group indicated that 49.8 percent of the students were White, not Hispanic ($n = 998$); 23.6 percent were Black, not Hispanic ($n = 472$); 22.6 percent were Hispanic ($n = 453$); 1.3 percent were American Indian/Alaskan, ($n = 27$); and 2.7 percent were Asian/Pacific Islander ($n = 54$). Fifty-six percent of the students indicated that they paid full price for their lunches, while 13 percent received reduced lunch rates, and 31 percent received free lunches.

Group II included 916 students of whom 45% were male ($n = 367$) and 55% were female ($n = 444$). There were 391 seventh graders, 267 eighth graders, and 254 ninth graders. Students ranged in age from 13 to 16 years. Those beyond the specified range were excluded from the analyses. Classification by ethnic group indicated that 49.9% were White, not Hispanic ($n = 415$); 22.5% were Black, not Hispanic ($n = 187$); 21.8% were Hispanic ($n = 181$); 2.3% were American Indian/Alaskan ($n = 19$); and 3.5% were Asian/Pacific Islander ($n = 29$). Fifty-six percent of the students indicated that they paid full price for their lunches, while 12% paid reduced lunch fees and 32% received free lunches. The samples approximated the population of middle school and junior high school students in Florida's public schools, thus supporting the generalizability of the study.

Research Procedures

The CPRI was administered to approximately 220 classes of seventh, eighth, and ninth grade students from five public schools in Hillsborough County, Florida. Classes for whom administrative consent was given were asked to complete the CPRI, including demographic information.

For each testing session the teacher/advisor read the CPRI directions orally, and asked for students' questions regarding the directions and the questionnaire. Students were instructed to complete the demographic items and the

CPRI, placing their responses on an answer sheet that could be optically-scanned. The teachers collected the answer sheets and booklets, and thanked the students for their participation. The investigator collected the completed answer sheets and CPRI booklets, encoded testing and school information, and arranged for computer scoring of the answer sheets.

To establish the concurrent validity of the CPRI, Super's (1981) Career Development Inventory was administered to four of the classes, or approximately 100 eighth grade students in Group One, immediately following completion of the CPRI. The CPRI is based on an adaptation of Super's outline of the components of career maturity, adjustments being made for the middle school population. However, due to the high readability and complexity of language, the students were unable to complete the CDI. The teacher and Teachers-as-Advisors Coordinator noted that these students were some of the most academically advantaged students in the school. Likewise, their school has been recognized as having an academically and economically advantaged population. Therefore, the difficulties which these students encountered with the CDI seem to be typical for this grade level, and reinforce test reviews (Kapes & Mastie, 1988; Mitchell, 1985) in which it has been noted that the language of the CDI makes it appropriate for upper level secondary students at best. This also corresponds to observations by Thompson and Lindeman (1981) that portions

of the CDI were suitable for grades 11 and 12, but were too difficult for many students in grade 10 and below.

Therefore, it was concluded that no suitable instrument is available for establishing criterion-related validity with the CPRI.

Four other classes from the original sample, or approximately 100 students, were retested with the CPRI two weeks after the initial testing. The retesting took place in the same classrooms following the same procedures. These data were used to establish test-retest reliability for the CPRI.

Data Collection and Analyses

Data were collected for both factor analysis and cross-validation studies simultaneously in the testing sessions according to a procedure outlined by Crocker and Algina (1986). All items in the item pool were administered to all available examinees. Then, each coded answer sheet was computer scored, and students' data were randomly assigned by computer to the factor analysis or cross-validation condition, with a ratio of 75-to-25. The demographic profiles of the students were analyzed to validate the sampling procedures, and to determine the extent to which the results were generalizable to students in general.

Factor Analyses

Factor analysis is a statistical procedure for examining the pattern of intercorrelations among a set of measures, in this instance, test items. The analysis indicates which items relate to each other significantly, or cluster together, according to some underlying variable, or "factor." For this study factor analysis procedures were employed to determine (a) the number of factors which form the structure of the CPRI, (b) the nature of those factors, (c) the replicability, or reliability, of those factors, and (d) the construct validity of the factors.

Intercorrelations among the 68 items of the CPRI were obtained for Group I, and the resulting correlation matrix were subjected to principal components analysis to help determine the number of factors. For Group I, common factor analysis with the squared multiple correlations (R^2) in diagonals was conducted, followed by orthogonal (varimax) and oblique (promax) rotations of the three, four, and five-factor solutions.

Reliability

A subsample of Group I was retested two weeks after the initial data collection to determine the test-retest reliability of the CPRI. In addition, the remaining 25 percent of the original student data were used for a cross-validation study to examine the internal consistency of the factor subscales created by the Group I factor structure.

Cronbach's coefficient alphas were calculated for both Group I and Group II (the cross-validation sample).

Subject Variables

To determine whether significant differences existed across gender, t -tests were calculated between the CPRI total and factor (subscale) means for males and females. To determine differences in factor structure which might be attributable to gender, the factor analyses were repeated by gender designation. For the subject variables of grade level, ethnic origin, and lunch rates, analyses of variance were calculated to establish whether any significant differences occurred. Correlations were calculated between CPRI total and subscale scores and students' achievement level as measured by the Stanford Achievement Test (1989).

CHAPTER IV RESULTS

The purpose of this study was to develop an assessment instrument which focused on the career planning and readiness of middle school students and investigate its construct validity. After a review of the professional literature five basic dimensions were identified upon which to assess middle school students' readiness for career planning. The dimensions were (a) career exploration, (b) work-related attitudes, (c) work-related behaviors, (d) career information, and (e) career aspirations. These dimensions were used to generate a list of possible test items, which were then organized into a formal instrument called the Career Planning Readiness Inventory (CPRI).

Specifically, the intent was to (a) develop a student inventory which focused on the career development of young adolescents, (b) administer the inventory to a sample of middle/junior high school students, and (c) evaluate the data within the framework of a construct validation study. This included investigation of the factor structure, convergent and discriminant validity of total test scores, reliability, and differential group performance.

The CPRI was administered to 3727 seventh, eighth, and ninth grade students from five schools in Hillsborough County, Florida. Then, students were randomly assigned by computer in a 75-to-25 ratio to Group I for the initial data analysis and Group II for the cross-validation study. Excluding students with incomplete data resulted in a sample size of 2019 for Group I and 916 for Group II. In this chapter, the findings of the study are presented in the following order (a) initial data analyses with Group I data including item analyses, factor analyses, and factor structure; (b) reliability analyses including test-retest reliability with a subsample of Group I and internal consistency with the cross-validation sample (Group II), (c) convergent validity, and (d) subject variables.

Initial Data Analyses

The initial analyses involved computing descriptive statistics for CPRI items and total scores and applying factor analytic procedures to the intercorrelations among the items. The results of these analyses are reported in this section.

Item Analyses

Means and standard deviations of the CPRI items for Group I were computed to determine whether each item elicited a full range of subject responses. The full range of responses from 1 to 5 was indicated on each of the 60 items. A low score indicated deficiencies in desirable

behaviors and attitudes related to career development, while a high score reflected preferable amounts of these career-related behaviors and attitudes. Response means of the items ranged from 1.71 to 3.66, and are reported in Table 4.

The possible range for a total score on the CPRI is 60 to 300, and the actual range among the 1638 students in Group I was 68 to 230. The mean standard errors for 46 of the items was .02. For the remaining 14 CPRI items the mean standard errors was .03. The mean for the CPRI total score was 136.62, the standard deviation 25.61, and the standard error of the mean .63. A Cronbach alpha coefficient was also calculated for the total score, and yielded an internal consistency coefficient of .91.

Factor Analyses

The following analyses were related to research questions numbers one and two regarding latent factors and factor structure. Specifically, the related research questions were:

1. What is the factor structure of the CPRI?
2. Do the factor loadings support the theoretical dimensions of the CPRI?

The purpose of factor analysis is to summarize the interrelationships among a set of variables, in this case a set of test items, in a concise, but accurate manner to aid in conceptualization. In other words, the major use of factor analysis is to find a limited number of factors that

Table 4

CPRI Item Means, Standard Deviations, Standard Error of Mean: Group I

Item #	Mean	SD	SE
2	2.11	0.88	.02
3	2.06	1.02	.02
4	2.49	1.26	.03
5	2.10	1.01	.02
6	2.67	1.03	.02
7	3.47	1.26	.03
8	3.17	1.10	.02
9	1.93	1.12	.02
10	1.97	0.94	.02
11	1.99	0.94	.02
12	2.16	0.92	.02
13	2.29	1.02	.02
14	2.89	1.19	.03
15	1.94	0.92	.02
16	2.06	0.97	.02
17	2.63	1.22	.03
18	1.94	1.08	.02
19	2.06	0.98	.02
20	2.43	1.26	.03

Note. Item #1 was a sample item, and was excluded from analysis.

Table 4, continued

Item #	Mean	SD	SE
21	2.96	1.23	.03
22	2.52	0.98	.02
23	3.36	1.18	.03
24	2.42	1.13	.02
25	2.13	0.98	.02
26	1.96	0.97	.02
27	1.90	0.96	.02
28	1.74	1.02	.02
29	1.68	0.90	.02
30	2.15	1.28	.03
31	1.91	1.05	.02
32	1.88	0.92	.02
33	2.00	1.05	.02
34	2.96	1.19	.03
35	1.99	1.02	.02
36	2.01	0.98	.02
37	2.42	1.22	.03
38	2.40	1.09	.02
39	2.01	1.16	.03
40	2.02	0.97	.02

Table 4, continued

Item #	Mean	SD	SE
41	2.12	1.00	.02
42	2.46	1.02	.02
43	1.68	0.92	.02
44	2.50	0.98	.02
45	2.33	1.24	.03
46	2.94	1.14	.02
47	1.91	0.90	.02
48	1.76	0.90	.02
49	1.76	0.92	.02
50	2.57	1.05	.02
51	2.93	1.24	.03
52	2.25	0.95	.02
53	2.88	1.13	.02
54	2.06	0.95	.02
55	2.34	1.05	.02
56	2.15	1.03	.02
57	3.66	1.07	.02
58	2.33	1.07	.02
59	2.38	0.99	.02
60	2.40	1.34	.03
61	1.71	0.86	.02
Total	136.62	25.61	.63

will contain the maximum amount of information about the items. Therefore, the original set of variables (items) is reduced to a much smaller set (factors) which accounts for most of the reliable variance of the initial item pool. The smaller set of factors can be used as operational representations of the constructs underlying the complete set of items (Gorsuch, 1983).

Intercorrelations of all items were calculated prior to factor analysis and are presented in Appendix B. In order to extract maximum variance from the data set, an exploratory common factor analysis was applied to the 60 items of the CPRI using prior communalities equal to the squared multiple correlations. Communality is the portion of a test's variance that is associated with variance on the common factors (Crocker & Algina, 1986). Of the several options for estimating prior communalities for factor analysis, using squared multiple correlations (R^2) provides a lower bound for the communality in the population, and therefore, gives conservative communality estimates. As the sample size increases, R^2 comes closer to the communality of the population itself (Gorsuch, 1983). Therefore, due to the large sample size of Group I used in these analyses ($n = 1019$), R^2 was chosen as the best estimate of the population communality.

As a result of the common factor analysis, the first ten eigenvalues were 11.31, 3.04, 1.45, 1.31, .68, .56, .53, .36, .29, and .26. The eigenvalues are the amount of

variance accounted for by each extracted factor. Because the purpose of factor analysis is to explain the variance across the variables (items) with as few factors as are meaningful, the scree plot of the eigenvalues was examined. This means that the eigenvalues were plotted on a graph. According to Gorsuch (1983), when the roots, or eigenvalues, drop dramatically in size, an additional factor would add relatively little to the information already extracted. Therefore, Gorsuch and Nelson (1981) designed an objective scree test which compares the slopes of the lines determined by the eigenvalues. A major difference between the slopes occurs at the number-of-factors point. Four factors were retained when this CNG (Cattell-Nelson-Gorsuch) Scree Test was applied to the data (Gorsuch, 1983).

In the unrotated solution factor one accounted for 63% of the variance, factor two 17%, factor three 8%, and factor four 7%. Together, the four factors accounted for 95% of the variance.

Orthogonal (varimax) and oblique (promax) rotation methods were conducted in order to determine the most accurate as well as interpretable factor structure of the items. Orthogonal rotation methods maintain the axes at 90 degrees and assume that the factors are uncorrelated. Oblique solutions assume that the factors are correlated, and therefore, allow the axes to depart from 90 degrees as they are rotated.

Following an orthogonal rotation, four clearly defined factors were present with 15, 11, 10, and 8 items having salient loadings of .40 or higher on these factors, respectively. Gorsuch (1983) suggested that correlations of .30 be considered as statistically significant, or "salient," with sample sizes of at least 175 (p. 209). However, using the .40 criterion for significance gave a more interpretable solution; that is, the higher criterion gave fewer aberrant items. The factors and item loadings are shown in Table 5.

Following an oblique rotation, the factor pattern of salient loadings was similar. Specifically, factors one and two included 12 and 11 items, respectively, with salient loadings of .40 or higher. Factors three and four each included 9 items with loadings of .40 or higher. The factor structure, which Gorsuch (1983) recommended as the basic matrix for interpreting correlated factors, showed factor one to have 23 items and factor two to have 22 items which equalled or exceeded the .40 criterion. Factor three had 12 items and factor four had 5 items which loaded .40 or higher.

The oblique rotation inter-factor correlations were as follows: Factors 1 and 2 (.50), Factors 1 and 3 (.33), Factors 1 and 4 (.43), and Factors 2 and 3 (.22). The correlation between Factors 1 and 4 approached zero (-.03). Correlations which exceed .30 indicate a 9 percent or more overlap in variance among the factors (Isaac & Michael,

1983), suggesting complex rather than simple structure among the items.

Gorsuch (1983) noted that the varimax--promax rotation sequence provides a basis for determining whether orthogonal or oblique factors are more acceptable. If the correlations among the oblique factors are negligible, then the varimax solution would be accepted as reasonable. If the correlations seem significant, the oblique solution would be the choice.

The correlations among the factors, as well as the high internal consistency of the items ($r = .91$), seemed to indicate that the oblique solution would have been the more appropriate interpretation of the factor structure. However, the interpretability criterion pointed more favorably to the orthogonal solution. In other words, the orthogonal solution approached simple structure more closely than did the oblique rotation by showing fewer nuisance, or inexplicable items (8 vs. 12), and fewer items with multiple loadings across factors (5 vs. 11). Various rotation procedures, including varimax and promax, produce the same factors, according to Gorsuch (1983). Therefore, the orthogonal rotation (varimax) expedited more appropriately the interpretation of the factors and ease of description.

Table 5

Factor Pattern for CPRI Items Following a Common Factor Analysis with an Orthogonal Rotation: Group I

Item	Factors				Communality
	1	2	3	4	
2	.20	.17	.27	.13	.16
3	.46*	.15	.14	.06	.26
4	.28	.08	.42	.08	.26
5	.19	.40*	.19	.07	.24
6	.08	.02	.36	.03	.14
7	-.01	.05	.43*	-.06	.19
8	.07	.01	.10	.25	.08
9	.18	.17	-.05	.00	.06
10	.29	.42*	.17	.04	.30
11	.19	.53*	.18	.10	.36
12	.29	.15	.35	.18	.26
13	.33	.20	.31	.07	.25
14	.11	-.02	.09	.46*	.24
15	.30	.41*	.11	.04	.28
16	.46*	.25	.19	.04	.32
17	.30	.06	.35	-.02	.22
18	.46*	-.04	.22	.12	.28
19	.32	.29	.10	.07	.20
20	.06	.44*	-.00	.48*	.42
21	.17	.07	.13	.48*	.28

*Salient loadings $\geq .40$

Table 5, continued

Item	Factors				Communality
	1	2	3	4	
22	.19	-.00	.47*	.07	.26
23	-.08	.04	.47*	-.15	.25
24	.06	.47	.30	.07	.32
25	.33	.35	.19	.03	.27
26	.48*	.25	.18	.09	.34
27	.43*	.40*	.07	.13	.36
28	.28	.36	-.08	.15	.24
29	.42*	.33	.02	.21	.33
30	.27	.22	-.13	.52*	.41
31	.46*	.14	.11	.02	.25
32	.52*	.24	.16	.22	.40
33	.49*	.05	.25	.19	.34
34	.03	.04	.00	.32	.10
35	.21	.53*	.07	.18	.36
36	.20	.52*	.16	.13	.36
37	.14	.32	-.10	.51*	.40
38	.25	.17	.35	.00	.21
39	.06	.09	.46*	-.06	.22
40	.50*	.12	.19	.21	.32
41	.05	.57*	.26	.14	.41

*Salient loadings $\geq .40$

Table 5, continued

Item	Factors				Communality
	1	2	3	4	
42	.02	.47*	.40*	.07	.39
43	.41*	.34	.05	.24	.34
44	.21	.21	.48*	.07	.32
45	.10	.40*	-.12	.51*	.45
46	-.04	.10	-.01	.38	.15
47	.32	.45*	.11	.11	.33
48	.41*	.45*	.05	.24	.43
49	.50*	.30	.00	.15	.45
50	.16	.11	.48*	.07	.28
51	-.04	.07	.55*	-.08	.32
52	.31	.15	.36	.14	.26
53	.09	.08	.04	.56*	.33
54	.46*	.17	.18	.14	.29
55	.21	.04	.45*	.14	.27
56	.40*	.23	.23	.05	.34
57	-.26	-.07	.01	.21	.12
58	.23	.27	.31	.07	.23
59	.20	.11	.42*	.09	.24
60	.13	.30	-.13	.46*	.39
61	.23	.31	.16	.11	.19

*Salient loadings $\geq .40$

The items were factored again using orthogonal rotation for three factors. Forty-one items (41) loaded .40 or higher on factor one, six items loaded .40 or higher on factor two, and zero loaded .40 or higher on factor three. Such a heavy concentration of items on factor one lessened the clarity of its interpretation. For example, "I can classify jobs into groups" and "I usually quit a task before it is done" clustered together on factor one. In addition, four of the six items which loaded on factor two also loaded on factor one. Therefore, the factors were more clearly and uniformly defined by the four factor solution.

Repeating the factor analysis with five factors gave 16 items loading .40 or higher on factor one, 11 on factor two, 10 on factor three, 8 on factor four, and zero on factor five. Therefore, the orthogonal rotation of the four factor solution was retained as the simplest, most parsimonious and interpretable solution.

Factor Structure

For each of the four factors the items were ranked from high to low according to their respective factor loadings. Labeling of the factors was based on the content of the items as shown in Table 6.

Factor one was composed of 15 items with loadings of .40 or higher. Item content centered on immediate, intermediate, and distant career-related goals. More specifically, factor one included items such as, "I can

picture myself graduating from high school" and "I know the kind of work I want to do in the future."

Factor two included 16 items with loadings of .40 or higher. The focus of the items was positive attitudes toward work and work-related behaviors; for example, "I take responsibility for what I do" and "I stick with a school assignment until it is done."

Factor three was comprised of 13 items with salient loading. The items were about seeking and gaining information about careers such as, "I've had some good talks with my teachers about the education needed for different occupations" and "I have received a lot of useful information about careers from the library."

Factor four included nine salient items all of which were negatively worded. The items pertained to school behaviors, attitudes, goals, and career information; for example, "When class assignments are given, I barely listen" and "I have difficulty matching jobs with the education required for them."

The means and standard deviations for the CPRI total score and the subscales which were created as a result of the four factor solutions are shown in Table 7. These means would be the basis for comparison of subsequent group and individual scores to the initial norming sample as well as for making decisions regarding career interventions.

Table 6

Factor Structure of CPRI: Group IFactor One

Item #	Loading	Content
49	.58	I look forward to learning about the job I want.
32	.52	I can see myself being successful in a job.
40	.50	I have some ideas about which jobs fit my interests.
33	.49	I know what I want to do when I graduate from high school.
26	.48	I look forward to making choices about my career.
56	.48	When I think of my future, I get excited.
3	.46	I like to imagine the career track I will take.
16	.46	I get excited about the opportunities in my future.
18	.46	I know the kind of work I want to do in the future.
31	.46	I dream about the kind of life I'll have when I grow up.
54	.46	I envision the lifestyle I will make for myself in the future.
27*	.43	Honest work has value in itself.
29	.42	I am aware of how education relates to well paying jobs.
43	.41	I can picture myself graduating from high school.
48*	.41	I am determined to do well.

Note. *Multiple loadings

Table 6, continued

Factor Two

Item	Loading	
41	.57	I stick with a school assignment until it is done.
11	.53	I follow directions to complete a task.
35	.53	I bring my study materials to class regularly.
36	.52	Once I know what to do, I work independently to complete my assignments.
24	.47	I usually start to work on an assignment right away
42*	.47	I organize my study time to work effectively.
47	.45	I take responsibility for what I do.
48*	.45	I am determined to do well.
28*	.44	When class assignments are given, I barely listen.
18	.42	Helping others is important to me.
15	.41	I respect the rights and opinions of others.
5	.40	You can count on me to do what is right.
27*	.40	Honest work has value in itself.
45*	.40	I usually turn in my homework late.

Note. *Multiple loadings

Table 6, continued

Factor Three		
Item	Loading	Content
<hr/>		
51	.55	I have had some very good talks with my teachers about the education needed for different occupations.
44	.48	I can easily classify jobs into groups according to data, people, and things.
58	.48	I am familiar with the guidance resources for career and college exploration.
22	.47	I know which jobs have the best opportunities for advancement.
23	.47	I have received a lot of useful information about careers from the library.
39	.46	I have learned a lot about different by visiting job sites.
55	.45	I have an idea of what colleges offer and the degrees they give.
7	.43	I have had successful talks with my school counselor about my plans for high school.
59	.42	I am aware of the relationship between resumes and job interviews.
4	.42	I have talked seriously with my parents about my plans for high school.
42*	.40	I organize my study time to work effectively.

Note. *Multiple loadings

Table 6, continued

Factor Four

Item	Loading	Content
53	.56	I have difficulty matching jobs with the education required for them.
30	.52	I doubt that I'll reach my goals.
37	.51	I usually quit a task before it is done.
45*	.51	I usually turn my homework in late.
20*	.48	When class assignments are given, I barely listen.
21	.48	I have hardly thought about which classes will prepare me for the occupation I want.
60	.46	I usually disobey school rules.
14	.46	I am unsure about ways to find and get a job.

Note. *Multiple loadings

Table 7

Means and Standard Deviations for CPRI Total and Factors:
Group I

	Mean	SD	SE
Total	136.62	25.61	.63
Factor 1	28.55	8.52	.20
Factor 2	33.23	9.26	.21
Factor 3	34.84	7.43	.17
Factor 4	23.26	6.76	.16

Reliability

This section includes results related to research question three; what is the test-retest reliability and internal consistency of the CPRI and any factor-related subscales? Test-retest reliability was examined with data from a subsample of Group I and internal consistency was examined with the cross-validation sample, Group II. The purpose of this cross-validation study was to establish the reliability (Crocker & Algina, 1986, p. 328) of the subscales created by the initial factor analysis. The initial factor structure was used as the subscale definition for Group II, and the internal consistency reliabilities of the subscales and total scores were examined.

Test-Retest Reliability

One hundred eighth grade students were scheduled to take the CPRI two weeks after the first administration. Due to absenteeism, a total of 86 students completed the second testing. Excluding forms with incomplete data resulted in a sample of 83 students, of which 53 percent were male ($n = 44$) and 47 percent ($n = 39$) were female. Matching by names resulted in a group of 54 on which to compute the correlation. According to the findings in Table 8, a Pearson correlation coefficient yielded a total score reliability of .78, which is statistically significant at the .0001 level of confidence. A study of the test-retest reliabilities in Table 8 indicates that correlations for the

four factor subscales ranged from .39 for factor four to .63 for factor one.

Table 8

Test-Retest Reliabilities of CPRI Total and Factors
Pearsonian r for Two-Week Interval (n = 83)

Score	# of Items	Correlation (r)
Total	60	.78**
Factor 1	15	.63**
Factor 2	14	.59**
Factor 3	11	.56**
Factor 4	8	.39*
*p < .001 **p < .0001		

Internal Consistency

When the factor subscales were defined by the structure obtained for Group I, Cronbach's coefficient alphas were calculated for each of the four factors. For Group I data, the internal consistency reliability coefficients were .86, .85, .78, and .79 for factors one through four, respectively. For Group II (cross-validation sample) data, coefficient alpha values for factors one through four were .83, .84, .77, and .62, respectively. For the total CPRI the internal consistency coefficients were .91 and .91 for Groups I and II, respectively.

Convergent Validity

Convergent validity is related to research question number four; what is the correlation between the CPRI and the Career Development Inventory (Super et al., 1981)? When attempts were made to gather data for the CDI, eighth grade students were unable to complete the inventory due to its difficult vocabulary, complex sentence structure, and length. Therefore, in trying to establish the concurrent validity of the CPRI, the criterion (CDI) failed.

Subject Variables

The following analyses were related to the research questions numbered five through nine regarding subject variables of achievement level, grade level, gender, ethnic origin, and family income. The pertinent research questions were:

5. What is the relationship between the subject variable of achievement level as measured by the Stanford Achievement Test (1989) and level of career development as measured by the CPRI (i.e., discriminant validity)?
6. What is the relationship between students' grade level and degree of career development as measured by the CPRI?
7. What is the difference between gender groups in levels of career development, as measured by the CPRI?
8. What are the differences between ethnic groups in levels of career development, as measured by the CPRI?
9. What are the differences based on the subject variable of student lunch rate, used to estimate family income, and levels of career development, as measured by the CPRI?

Achievement level

Achievement test data from the spring 1992 administration were gathered for the students who participated in this study. Computer matching by names resulted in a sample size of 294, which was deemed adequate for this analysis. Seventh and eighth grade students took the Stanford Achievement Test (Advanced II), Form J (1989), and ninth grade students took the Stanford Test of Academic Skills (Tasks 1, 2, 3), Forms J/K (1989) which included Science and Social Studies subtests. Scaled standard scores from the Stanford were used in this analysis. They are linear scores which generate a continuous curve across grades 1 - 12, and therefore, allow comparisons and statistical manipulations across grade levels (J. Hilderbrand, personal communication, June 12, 1992). An inspection of the correlations in Table 9 revealed that the correlations among between students' achievement level and CPRI total and subscale scores were statistically nonsignificant. This is inconsistent with correlations often reported between achievement and measures of career maturity (e.g., Super et al., 1981). Therefore, the validity of the CPRI is supported, because its use does not appear to be limited by students' achievement level. This could be partly attributable to its low readability level (5.62) in relation to the sample (grades 7 - 9).

Table 9

Correlations Among CPRI Total and Factor Scores and Achievement Test Scores: Grades 7, 8, and 9

	CPRI	F1	F2	F3	F4
CPRI Total	--	.86*	.85*	.78*	.64*
Factor 1		--	.69*	.46*	.45*
Factor 2			--	.39*	.66*
Factor 3				--	.89*
Factor 4					--

	Reading	Language	Math	Total Battery
CPRI Total	-.03	.01	-.02	-.01
Factor 1	-.04	-.00	-.05	-.02
Factor 2	-.07	-.05	-.07	-.06
Factor 3	-.04	.02	-.06	-.03
Factor 4	.03	.03	.14	.09
Reading	--	.79*	.74*	.92*
Language		--	.74*	.89*
Math			--	.98*
Total Battery				--

*p < .0001

Grade level

Analyses of variance of CPRI total and subscale scores across three grades (7, 8, and 9) revealed statistically significant differences as shown in Tables 10, 12, and 15. Specifically, statistically significant differences occurred across grades for the CPRI total score and factors one and three. As noted in Tables 14 and 17, the analyses of variance for factors two and four across grades were nonsignificant. A review of the results of Tukey's HSD tests in Tables 11, 13, and 16 pinpoints between which grades the differences occurred. Specifically, statistically significant differences were noted on the CPRI total score, factor one, and factor three between grades 7 and 9 and between grades 8 and 9, but not between grades 7 and 8. On the CPRI total score, grade 7 students ($n = 600$) in Group I obtained a mean of 139 ($SD = 25.29$), while grade 8 students ($n = 503$) had a mean of 138.25 ($SD = 25.96$), and grade 9 students ($n = 535$) showed a mean of 132.44 ($SD = 25.17$). On factor one, grade 7 students obtained a mean 29.20 ($SD = 8.64$), while grade 8 students had a mean of 29.07 ($SD = 8.66$) and grade 9 students a mean of 27.28 ($SD = 8.09$). On factor three, seventh graders obtained a mean of 35.99 ($SD = 7.42$), while eighth graders scored 34.88 ($SD = 7.28$) and ninth graders 33.46 ($SD = 7.36$).

Table 10

Analysis of Variance of CPRI Total Scores Across Three Grades

Source	DF	SS	MS	F
Grade	2	14,095.91	7047.95	10.88*
Error	1635	1,059,495.94	648.01	
Total	1637	1,073,591.84		

*p < .001

Table 11

Comparison of Grade and CPRI Total Scores

Grade Comparison	Mean	SD	SE	Difference Between Means
7 (n = 600)	139.00	25.29	1.03	
8 (n = 503)	138.25	25.96	1.16	-0.75
7 (n = 600)	139.00	25.29	1.03	
9 (n = 535)	132.44	25.17	1.09	-6.56*
8 (n = 503)	138.25	25.96	1.16	
9 (n = 535)	132.44	25.17	1.09	-5.81*

*p < .05

Table 12

Analysis of Variance of CPRI Factor 1 Scores Across Three Grades

Source	DF	SS	MS	F
Grade	2	1,433.85	716.92	9.98*
Error	1899	136,480.29	71.87	
Total	1901	137,914.14		

*p < .0001

Table 13

Comparison of Grade and CPRI Factor 1 Scores

Grade Comparison	Mean	SD	SE	Difference Between Means
7 (n = 706)	29.20	8.64	.32	
8 (n = 596)	29.07	8.66	.35	.13
7 (n = 706)	29.20	8.64	.32	
9 (n = 600)	27.28	8.09	.33	-1.92*
8 (n = 596)	29.07	8.66	.35	
9 (n = 600)	27.28	8.09	.33	-1.79*

p < .05

Table 14

Analysis of Variance of CPRI Factor 2 Scores Across Three Grades

Source	DF	SS	MS	F
Grade	2	538.02	269.01	3.14
Error	1874	160,327.63	85.55	
Total	1876	160,865.65		

Table 15

Analysis of Variance of CPRI Factor 3 Scores Across Three Grades

Source	DF	SS	MS	F
Grade	2	2,099.92	1049.96	19.40*
Error	1896	102,624.80	54.13	
Total	1898	104,724.72		

*p < .0001

Table 16

Comparison of Grade and CPRI Factor 3 Scores

Grade Comparison	Mean	SD	SE	Difference Between Means
7 (n = 702)	35.99	7.42	.28	
8 (n = 587)	34.88	7.28	.30	-1.11
7 (n = 702)	35.99	7.42	.28	
9 (n = 610)	33.46	7.36	.30	-2.53*
8 (n = 587)	34.88	7.28	.30	
9 (n = 610)	33.46	7.36	.30	-1.42*

$p < .05$

Table 17

Analysis of Variance of CPRI Factor 4 Scores Across Three Grades

Source	DF	SS	MS	F
Grade	2	385.05	192.53	4.22
Error	1899	86,616.64	45.61	
Total	1901	87,001.70		

Gender

A comparison of CPRI scores for males and females is shown in Table 18. On the CPRI total score, males ($n = 726$) in Group I showed a mean score of 140.44 ($SD = 25.9$), while females ($n = 912$) had a mean score of 133.59 ($SD = 24.98$). Applying Welch's t -test for means with unequal variances indicated that this calculated difference was statistically significant ($p < .05$).

Table 18

CPRI Total and Subscale Score Means, Standard Deviations, and Standard Error of the Mean by Gender

	Mean	SD	SE	<i>t</i>
Total				
M (n = 726)	140.44	25.90	.96	5.3986*
F (n = 912)	133.59	24.98	.83	
Factor 1				
M (n = 881)	29.82	8.81	.30	6.0370*
F (n = 1021)	27.46	8.10	.25	
Factor 2				
M (n = 873)	35.27	9.31	.32	9.0397*
F (n = 1004)	31.46	8.85	.28	
Factor 3				
M (n = 881)	34.66	7.65	.26	-0.9479
F (n = 1018)	34.99	7.23	.23	
Factor 4				
M (n = 883)	24.54	6.80	.23	7.7546*
F (n = 1019)	22.15	6.54	.20	

* $p < .0001$

Factor Analysis by Gender

To determine whether gender differences affected the factor structure of the CPRI, the factor analytic procedures were repeated for males and females in Group I. The results of the orthogonal rotation of the four-factor solution for males ($n = 952$) is shown in Table 19. For males sixteen items loaded at or above .40 on factor one, 11 on factor two, 7 on factor three, and 9 on factor four. The results for females ($n = 1058$) are shown in Table 20. For females thirteen items loaded at or above .40 on factor one, 10 on factor two, 14 on factor three, and 8 on factor four.

Comparing the factor pattern for males (Table 19) with the one for females (Table 20) lead to the observation that the items define the same four factors regardless of gender (See table 21). However, factor two for males coincided with factor three for females, and factor three for males was similar to factor two for females. The items which had salient loadings ($\geq .40$) on factor one for males and females were: 3, 16, 18, 26, 27, 29, 31, 32, 33, 40, 49, and 54. For males, additional items loaded at or above the criterion on factor one; specifically, 28, 43, 47, and 48. Similarly, for females, item 56 loaded at or above the criterion. Factor two (males) and factor three (females) were defined similarly by items 4, 7, 22, 23, 39, 44, 50, 51, 55, and 59. To these items males added only item 42. On Factor three (males) and factor two (females) the items which had salient

Table 19

Factor Pattern for CPRI Items Following a Common Factor Analysis with an Orthogonal Rotation: Group I Males

Items	Factors				Communality
	1	2	3	4	
2	.25	.29	.10	.10	.17
3	.46*	.16	.14	.00	.26
4	.21	.45*	.05	.08	.26
5	.29	.17	.38	.05	.26
6	.13	.39	.00	.02	.17
7	-.02	.40*	.06	-.16	.19
8	.00	.06	-.00	.28	.09
9	.19	-.06	.22	-.02	.09
10	.34	.22	.32	.06	.27
11	.31	.19	.49*	.04	.37
12	.32	.34	.10	.19	.26
13	.30	.29	.17	.03	.20
14	.14	-.01	-.04	.43	.21
15	.33	.16	.34	.03	.26
16	.43*	.23	.21	.07	.29
17	.24	.38	.05	-.05	.21
18	.44*	.21	-.05	.08	.25
19	.35	.09	.19	.07	.17
20	.11	-.03	.40*	.44*	.36
21	.09	.14	.00	.49*	.27

*criterion $\geq .40$

Table 19, continued

Items	Factors				Communality
	1	2	3	4	
22	.18	.47*	-.01	.02	.25
23	-.07	.46*	.07	-.16	.25
24	.12	.30	.48*	.06	.34
25	.31	.22	.31	.07	.25
26	.47*	.20	.22	.10	.32
27	.48*	.07	.31	.13	.35
28	.41*	-.05	.28	.15	.28
29	.46*	.05	.28	.18	.33
30	.28	-.14	.17	.52*	.40
31	.44*	.19	.10	.04	.24
32	.54*	.18	.18	.16	.38
33	.46*	.23	.03	.20	.31
34	-.01	.04	.03	.38	.14
35	.24	.05	.51*	.13	.34
36	.30	.17	.49*	.08	.37
37	.16	-.16	.31	.53*	.43
38	.25	.36	.16	.02	.22
39	.03	.46*	.02	-.03	.21
40	.55*	.14	.07	.13	.34
41	.10	.23	.60*	.16	.44

*criterion $\geq .40$

Table 19, continued

Items	Factors				Communality
	1	2	3	4	
42	.04	.43*	.48*	.09	.42
43	.46*	.06	.27	.23	.34
44	.27	.52*	.19	.00	.38
45	.16	-.15	.36	.51*	.44
46	-.06	-.07	.08	.43*	.20
47	.43*	.13	.34	.06	.32
48	.40*	.08	.36	.20	.41
49	.62*	.09	.22	.10	.44
50	.18	.51*	.12	.00	.31
51	-.07	.53*	.14	-.10	.32
52	.34	.33	.18	.14	.28
53	.11	-.00	.04	.60*	.38
54	.46*	.21	.12	.12	.29
55	.24	.42*	.12	.09	.26
56	.38	.31	.20	.06	.28
57	-.30	-.02	-.02	.23	.14
58	.27	.34	.30	.03	.29
59	.24	.45*	.04	.02	.26
60	.16	-.12	.33	.45*	.35
61	.23	.16	.27	.11	.17

*criterion $\geq .40$

Table 20

Factor Pattern for CPRI Items Following a Common Factor Analysis with an Orthogonal Rotation: Group I Females

Items	Factors				Communality
	1	2	3	4	
2	.13	.19	.27	.15	.15
3	.48*	.12	.11	.11	.26
4	.34	.08	.40*	.07	.28
5	.15	.41*	.20	.07	.24
6	.01	.04	.36	.07	.13
7	.00	.07	.46*	-.02	.21
8	.06	.00	.15	.23	.08
9	.20	.11	-.06	.02	.06
10	.26	.45*	.17	.00	.30
11	.12	.54*	.17	.15	.36
12	.28	.18	.37	.17	.27
13	.36	.20	.34	.10	.29
14	.07	-.02	.20	.48	.28
15	.30	.41*	.08	.04	.27
16	.51*	.26	.15	.01	.35
17	.35	.03	.33	-.01	.23
18	.48*	-.06	.22	.15	.30
19	.32	.34	.11	.07	.24
20	.04	.46*	.01	.49*	.45
21	.21	.09	.16	.48*	.30

*criterion $\geq .40$

Table 20, continued

Items	Factors				Communality
	1	2	3	4	
22	.21	.01	.47*	.12	.28
23	-.07	.04	.47*	-.17	.26
24	.07	.46*	.27	.06	.30
25	.38	.34	.18	-.02	.29
26	.50*	.22	.19	.09	.35
27	.40*	.40*	.09	.13	.35
28	.19	.36	-.09	.15	.19
29	.42*	.30	.01	.26	.33
30	.29	.25	-.13	.52*	.44
31	.40*	.11	.06	.00	.25
32	.53*	.25	.12	.28	.44
33	.52*	.02	.28	.18	.38
34	.04	.06	-.00	.26	.07
35	.21	.50*	.08	.24	.36
36	.16	.52*	.14	.18	.35
37	.15	.33	-.05	.47*	.36
38	.28	.17	.32	-.04	.21
39	.10	.18	.45*	-.12	.26
40	.47*	.12	.23	.26	.36
41	.06	.56*	.27	.11	.40

*criterion $\geq .40$

Table 20, continued

Items	Factors				Communality
	1	2	3	4	
42	.04	.48*	.36	.04	.37
43	.38	.33	.06	.27	.33
44	.17	.22	.44*	.13	.28
45	.06	.40*	-.10	.52*	.44
46	-.02	.11	.06	.31	.11
47	.24	.49*	.10	.16	.34
48	.36	.48*	.04	.29	.45
49	.57*	.32	.06	.20	.47
50	.13	.10	.46*	.13	.26
51	-.00	.04	.56*	-.08	.33
52	.29	.11	.38	.14	.26
53	.08	.09	.09	.51*	.28
54	.46*	.18	.15	.16	.30
55	.19	-.00	.47*	.18	.29
56	.58*	.24	.16	.04	.42
57	-.23	-.05	.04	.19	.09
58	.19	.23	.28	.12	.18
59	.15	.16	.41*	.16	.24
60	.11	.38	-.13	.47*	.39
61	.26	.34	.14	.12	.22

*criterion $\geq .40$

Table 21

Factor Structure of the CPRI by Gender: Group I

Factor One

Item	Loading		Content
	M	F	
49	.62	.57	Look forward to learning about job
40	.55	.49	Know which jobs fit my interests
32	.54	.53	See myself being successful
48	.48	-	Determined to do well
27	.48	.40	Honest work has value
26	.47	.50	Look forward to making career choices
54	.46	.46	Envision my future lifestyle
29	.46	.42	Education relates to jobs
43	.46	-	Picture myself graduating
33	.46	.52	Know what I want to do
3	.46	.48	Imagine my career track
18	.44	.48	Know kind of work I want
31	.44	.48	Dream about kind of life I'll have
16	.43	.51	Excited about my opportunities
47	.43	-	Take responsibility
28	.41	-	On time for school
56	-	.58	Excited about my future

Table 21, continued

Factor Two (Males)			Factor Three (Females)
Item	Loading		Content
	M	F	
51	.53	.56	Talk with teachers about education
44	.52	.44	Classify jobs into categories
50	.51	.47	Guidance resources for exploration
22	.47	.47	Opportunities for advancement
23	.46	.47	Career information from the library
39	.46	.45	Visited different job sites
4	.45	.40	Talk with parents about jobs
59	.45	.41	Resumes and job interviews
42*	.43	-	Organize my study time
55	.42	.47	What colleges offer
7	.40	.47	Talk with school counselor about plans

*Multiple loadings across factors

Table 21, continued

Factor Three (Males)			Factor Two (Females)
Item	Loading		Content
	M	F	
24	.48	.47	Start to work right away
11	.49	.54	Follow directions
36	.49	.52	Work independently
41	.60	.56	Stick with assignment
42*	.48	.48	Organize my study time
35	.51	.50	Bring study materials
20*	.40	.46	Listen
47	-	.49	Take responsibility
48	-	.48	Determined
10	-	.45	Helping others is important
15	-	.41	Respect others
5	-	.41	You can count on me
45	-	.40	Turn in homework
27	-	.40	Honest work has value

*Multiple loadings across factors

Table 21, continued

Factor Four

Item	Loading		Content
	M	F	
53	.60	.51	Matching jobs to education
37	.53	.47	Stick with a task
30	.52	.52	Reach my goals
45	.51	.52	Turn in homework
21	.49	.48	Classes which will prepare for jobs
60	.45	.47	School rules
20*	.44	.49	Listen to assignments
14	.43	.48	Ways to find a job
46	.43	-	Locating career information

*Multiple loadings across factors

loadings for both males and females were: 11, 20, 24, 35, 36, 41, and 42. Males added no items to the factor structure, while females added items 5, 10, 15, 27, 45, 47, and 48. Factor four was defined by salient loadings of items 14, 20, 21, 30, 37, 45, 53, and 60 for both males and females. Males added item 46 to their factor structure, while females added no other items.

Ethnic origin

An analysis of variance of CPRI total scores across five categories of ethnic origin was calculated. A review of the data in Table 22 indicated that the obtained F -ratio of 2.71 was not statistically significant at the .01 level of confidence. Therefore, no statistically significant differences were found across the five ethnic categories.

Table 22

Analysis of Variance of CPRI Scores Across Five Categories of Ethnic Origin

Source	DF	SS	MS	F
Origin	4	7097.35	1773.59	2.71 NS
Error	1623	1,060,788.14	653.60	
Total	1627	1,067,882.50		

Note. n = 1628

Lunch rates

An analysis of variance of CPRI total scores across three lunch rates (i.e., family income levels) revealed that the obtained F -ratio of 10.33 was statistically significant ($p < .0001$) as shown in Table 23. The results of Tukey's HSD test as noted in Table 24 pinpointed differences between students who paid full price for lunch (family salary >

Table 23

Analysis of Variance of CPRI Scores Across Three Lunch Rates

Source	DF	SS	MS	F
Income	2	13,402.20	6701.10	10.33*
Error	1635	1,060,189.64	648.43	
Total	1637	1,073,591.84		

*p < .0001

Table 24

Comparison of Student Lunch Rates and CPRI Score

Lunch Rate Comparison	Mean	SD	Difference Between Means
Full (n = 956)	134.64	26.30	
Reduced (n = 200)	143.32	22.39	-8.68*
Full (n = 956)	134.64	26.30	
Free (n = 482)	137.79	24.98	-3.15
Reduced (n = 200)	143.32	26.30	
Free (n = 482)	137.79	24.98	5.55*

Note. Full lunch rate (Annual salary > \$24,790)

Reduced rate (\$17,420 < Annual salary < \$24,790)

Free lunch (Annual salary < \$17,420)

*p < .05

\$24,790) and those who paid reduced rates (family salary between \$17,420 and \$24,790) as well as between those paying reduced rates and those receiving free lunches (family salary < \$17,420). However, statistically significant differences were not found between those paying full lunch rates and those receiving free lunches. Students who paid full lunch rates ($n = 956$) showed a mean of 134.64 ($SD = 26.30$), while students who paid reduced rates ($n = 200$) had a mean of 143.32 ($SD = 22.39$), and students who received free lunches ($n = 482$) had a mean of 137.79 ($SD = 24.98$).

Summary

In summary, the results of the factor analysis of the CPRI resulted in the emergence of four well-defined factors. Factor analyses by gender supported the structure of the four factors. In addition, statistically significant differences were found between levels of career development as measured by the CPRI as functions of students' grade level, gender, and lunch rate. However, the relationships between the CPRI and achievement level and differences as a function of ethnic origin were not statistically significant. The CPRI total score was stable over a two-week test-retest period. Internal consistency coefficients (coefficient alpha) for each of the four factors for Group I (initial analyses) and Group II (cross-validation sample) were found to be moderate to high. These results are discussed in Chapter Five.

CHAPTER V DISCUSSION

In this chapter a summary of the research is presented, followed by conclusions related to the research questions. Then, the limitations of the study are discussed. Finally, implications of the study and recommendations are presented.

Summary

The purpose of this study was to develop an assessment instrument which focused on the career planning and readiness of middle/junior high school students. A review of the professional literature generated five basic dimensions of career development considered to be essential for students' career planning (a) career exploration, (b) work-related behaviors, (c) work-related attitudes, (d) information about the world of work, and (e) career aspirations. These dimensions were used to create a list of possible test items which were organized into a formal instrument called the Career Planning Readiness Inventory (CPRI).

Preliminary forms of the CPRI were tested with fifth and eighth grade students from Citrus and Alachua counties in Florida. As a result of these pilot studies, items were

revised, directions rewritten, and the instrument length adapted. The final form of the CPRI consisted of 60 statements related to students attitudes, behaviors, thoughts, and activities about school and careers. In addition, demographic information was gathered at the end of the inventory.

The CPRI was administered to 3727 seventh, eighth, and ninth grade students from five junior high schools in Hillsborough County (Florida). Students' answer sheets were computer-scanned and the data processed through SAS statistical programs. Students were randomly assigned by computer in a 75-to-25 ratio to Group I for the initial data analyses or Group II for cross-validation.

Generalizability

The results of this study indicate that the CPRI is an appropriate and useful instrument for assessing the career development of middle/junior high school students. Subject variables which were measured to describe the sample indicate that these samples, Groups I and II, are representative of middle and junior high school students in Florida on the demographic variables of gender, age, ethnicity, family income, and grade level. Though all the characteristics of such students cannot be measured to ensure generalizability on all dimensions, the care given to selecting the sample from a metropolitan public school district makes it possible to generalize quite accurately to

other students. In other words, the students in this study were typical of middle/junior high school students.

Limitations

Limitations to this study might have occurred in the areas of sampling procedures, adequacy of instrumentation, and the subjects' responses. However, selection of five different schools in Hillsborough County, Florida, from which to draw subjects was an attempt to approximate a sample which would be representative of middle school students in general. Selection bias was minimized at the level of implementation by administering the CPRI to all available students in the classes at the time of testing.

Another limitation might have occurred as a result of administering the instrument in classroom groups. However, precautions were taken to assure uniform administration procedures, including (a) administration by teachers during the Teachers as Advisors period (an extended homeroom for guidance purposes), (b) a written transcript of oral directions, (c) active involvement of the Teachers-as-Advisors Coordinator at each school, and (d) administration at the same time of year (spring 1991).

Students' motivation to give honest answers and to take the instrument seriously was a potential source of error. However, students reported that the inventory was interesting. In addition, the Likert-type presentation increased the probability of accurate responses. Also, the

administrative procedures and time of year (i. e., just after achievement testing) increased the likelihood that students would treat the CPRI with the seriousness afforded other assessment instruments given in the school setting.

Instrument development was also a possible source of error. Constructs such as attitudes and feelings are difficult to measure objectively because they tend to be changeable and sensitive to many factors. In addition, two persons may mark the same response position on a rating scale for different reasons (Isaac & Michael, 1983). Such confounding factors could potentially affect the validity of a measuring device. However, test-retest reliability results indicate that students gave consistent responses across the two-week test-retest period. The validity of the instrument was supported by the replication of the four-factor solution across the initial and cross-validation situations as well as the homogeneity of the items within the factors as indicated by the high internal consistency reliability coefficients.

A final source of error might have occurred in the computer scoring of the instrument. However, care was exercised in reviewing the answer sheets for stray marks, unreadable responses, and incomplete data. In addition, to alleviate possible miscoding, school codes and grade levels were encoded by the researcher. To increase the incidence of true matches, subjects in the test-retest condition were matched by hand, rather than computer.

Conclusions

This section contains a discussion of the research questions and related conclusions. It is followed by recommendations for further research and practice.

What is the factor structure of the CPRI?

The results of the factor analysis define the CPRI as having four factors. Examining the content of the items which loaded highly on each factor points to the following labels (a) Factor One, Career Aspirations, (b) Factor Two, Work-Related Behaviors and Attitudes, (c) Factor Three, Career Information, and (d) Factor Four, Negatively-worded Career Items.

Factor One, Career Aspirations, is distinguished by 15 items, 11 which were written to fit the Career Aspirations dimension, two which were written as work-related attitudes, and one which was written as a career information item. As can be seen in Table 25, all of the items have a future orientation. More specifically, a future perspective is expressed by such statements as, "I am determined to do well," "I am aware of how education relates to jobs," and "Honest work has value."

Factor Two, Work-Related Behaviors and Attitudes, is defined by eight items from the dimension of work-related behaviors and six items from work-related attitudes. The items (See Table 25) are very similar in content. Attitudes are inferred from behaviors. Therefore, most of the items written to reflect work-related attitudes are behavioral

Table 25

CPRI Factors and Item Content**Factor One: Career Aspirations**

Item	Content
49	I look forward to learning about the job I want.
32	I can see myself being successful in a job.
40	I have some ideas about which jobs fit my interests.
33	I know what I want to do when I graduate from high school.
26	I look forward to making choices about my career.
56	When I think of my future, I get excited.
03	I like to imagine the career track I will take.
16	I get excited about the opportunities in my future.
18	I know what kind of work I want to do in the future.
31	I dream about the kind of life I'll have when I grow up.
54	I envision the lifestyle I will make for myself in the future.
27	Honest work has value in itself.
29	I am aware of how education relates to well paying jobs.
43	I can picture myself graduating from high school.
48	I am determined to do well.

Factor Two: Work-Related Behaviors and Attitudes

Item	Content
41	I stick with a school assignment until it is done.
11	I follow directions to complete a task.
35	I bring my study materials to class regularly.
36	Once I know what to do, I work independently to complete my assignments.
24	I usually start to work on an assignment right away.
42	I organize my study time to work effectively.
47	I take responsibility for what I do.
48	I am determined to do well.
20	When class assignments are given, I barely listen.
10	Helping others is important to me.
15	I respect the rights and opinions of others.
05	You can count on me to do what is right.
27	Honest work has value in itself.
45	I usually turn my homework in late.

Table 25, continued

Factor Three: Career Information

Item	Content
51	I have had some very good talks with my teachers about the education needed for different occupations.
44	I can easily classify jobs into groups according to data, people, and things.
50	I am familiar with the guidance resources for career and college exploration.
22	I know which jobs have the best opportunities for career advancement.
23	I have received a lot of useful information about careers from the library.
39	I have learned a lot about different jobs by visiting job sites.
55	I have an idea of what colleges offer and the degrees they give.
07	I have had successful talks with my school counselor about my plans for high school.
59	I am aware of the relationship between resumes and job interviews.
04	I have talked seriously with my parents about jobs and my future.
42	I can picture myself graduating from high school.

Factor Four: Career Decisiveness

Item	Content
53	I have difficulty matching jobs with the education required for them.
30	I doubt that I can reach my goals.
37	I usually quit a task before it is done.
45	I usually turn my homework in late.
20	When class assignments are given, I barely listen.
21	I have hardly thought about which classes will prepare me for the occupation I want.
60	I usually disobey school rules.
14	I am unsure about ways to find and get a job.

statements. One exception is "Honest work has value." These items more clearly fit the one category into which the factor analysis clustered them, rather than the two categories under which they were originally written.

Factor Three, Career Information, is composed of five items from the career exploration dimension, five items from the career information dimension, and one item from work-related behaviors. The content of the items as seen in Table 25 reflects actions involved in gaining career information (talking with people and visiting job sites) as well as information resident in students' memory (e. g., knowledge about resumes and colleges resources). The behavioral item (organize study time) might be associated with career information as a job preparatory activity.

Factor Four, Negatively-worded Career Items, is characterized by eight of the twelve statements which were worded negatively across the five original dimensions to decrease the likelihood of response set (see Table 25). To interpret this factor accurately, the reverse scoring of the items must be taken into consideration. What appear at first to be negative characteristics actually are positive. Several explanations might account for the negatively-worded items coalescing into one factor (a) the developmental stage of middle school students, (b) response set, and (c) the negatively-worded items. More specifically, middle school students might have been unable to interpret accurately the negatively-worded items in terms of the Likert type scale,

for example, responding to a negatively-worded statement with "strongly agree." In addition, students might have ignored the negative wording altogether, responding in the same mode to both negative and positive items (response set). Another explanation might be that the negatively-worded items created their own factor due to the manner in which middle school students process negatively-worded items.

Do the factor loadings support the theoretical dimensions of the CPRI?

The theoretical structure is supported by the factor loadings of the CPRI and is more clearly expressed by the factors which emerged than by the five original career dimensions. Specifically, Factor One combined items from the Career Aspirations dimension with four other items which had a future orientation. Factor Two combined items which reflected work-related attitudes and behaviors (previously two dimensions). Factor Three coalesced information-seeking (career exploration) and obtained information (information about the world of work). Factor Four clustered negatively worded items across the original five dimensions. The shifting of items and combining of dimensions makes sense, and does not undermine the purpose of the instrument. Therefore, the theoretical structure of the CPRI is supported.

What is the reliability of the CPRI?

The CPRI total score remained stable ($r = .78$) across a two-week interval. Test-retest reliabilities for the factor-related subscales were stable from moderate to high degrees. Therefore, the CPRI total score is stable across short time intervals, and the subscales created by the factor analysis were reliable across time.

Cronbach alpha correlation coefficients computed for the CPRI total score and factors in the initial analyses (Group I) and the cross-validation study (Group II) using the initial factor structure reflected moderate to high internal consistency reliabilities. This means that the items within the factors exhibited a high degree of homogeneity which was maintained in the cross-validation situation.

What is the convergent validity (i.e., correlation with the CDI) of the CPRI?

Attempts to establish the convergent validity of the CPRI with Super's (1981) Career Development Inventory (CDI) were unsuccessful due to the difficult vocabulary and sentence structure of the CDI which require the reading ability and comprehension of upper secondary school students.

What is the relationship between student's achievement level and career development?

There is no relationship between middle school students' achievement level as measured by the Stanford

Achievement Test (1989) and level of career development as measured by total and factor-related subscale scores on the CPRI. This means that the levels of career development as the CPRI measures them (i.e., career aspirations, career-related behaviors and attitudes, and career exploration) are independent of students' abilities in reading, math, or language. In other words, the use of the CPRI is not limited by middle school students' achievement level, nor are the CPRI results affected by students' academic abilities. In this regard CPRI results are inconsistent with reported correlations between other measures of level of career development and reading ability and achievement level (e.g., Thompson & Lindeman, 1984). The lack of relationship between the CPRI and achievement might be attributable to the CPRI's readability level (5.62) in relation to the sample (students in grade 7, 8, and 9). These results support the validity of the CPRI in that its use is not limited by the achievement level of students for which it was designed.

What is the relationship between students' grade level and level of career development?

Ninth grade students scored lower on the CPRI total, factor one, and factor three scores than did either eighth or seventh grade students. This difference was not expected. In comparison to eighth and seventh grade students, ninth graders would be expected to have more aspirations related to careers (factor one), to have gained

more career information (factor three), and therefore, to have a higher level of career development. However, ninth graders possessed less of these career-related characteristics. These results might be related to the greater demands which are placed on ninth graders to make educational and career decisions. In other words, the closer ninth grade students approach having to plan their careers, the less decisive they become. Another possible explanation might be that ninth graders were more realistic in their estimation of their readiness for career planning than were their seventh and eighth grade counterparts.

Apparently, the levels of career development for seventh and eighth grade students are very similar to each other. It appears that distinguishable change in this area occurred after eighth grade, perhaps during ninth grade. These students were tested in late April and early May.

What is the difference in career development on the basis of gender?

For the initial analysis with Group I data males scored higher on the CPRI total, factor one (career aspirations), factor 2 (work-related behaviors and attitudes), and factor four (negatively-worded career items) scores than did females. This means that male middle school students reported that they had a higher degree of career aspirations and desirable work-related behaviors and attitudes than did females.

To more closely examine these gender differences factor analyses by gender were calculated for Group I. These analyses resulted in the definition of the same four factors for both males and females. The factor structure was similar for both groups; however, some differences did occur in certain items loading at or above the .40 criterion for one gender, but not the other.

On Factor One, Career Aspirations, males added four items, namely, determined to do well, picture myself graduating, take responsibility, and on time for school. By contrast, females added one item, excited about my future. It appears that males associated action and attitude with aspiring toward a career, while females anticipated their future career emotionally.

Females alone embellished the Factor Two (Factor Three for males) definition for Work-Related Behaviors and Attitudes. They added the items which focused on taking responsibility, being determined, respecting others, being dependable, turning in homework, and valuing honest work. The unifying theme appears to be relationship with others. In other words, females viewed careers in terms of how they interact with other people.

Males alone supplemented their Factor Three definition, Career Exploration (Group I and female Factor Two). Specifically, they added organize my study time. It would appear that males experience career exploration as an active process as they did career aspirations.

On Factor Four, Negatively-worded Career Items, males added, "have difficulty locating career information." Remembering that all negatively worded items were reverse scored, the meaning of this item would be, "easily locate career information." This would fit the previously noted inclination of males to be actively involved in career decision making.

Although some differences occurred in the manner in which males and females displayed their readiness for career planning, the essential quality of the factor structure remained intact. The items which loaded at or above the .40 criterion on the four factors supported the labels of (a) career aspirations, (b) career exploration, (c) work-related behaviors and attitudes, and (d) negatively-worded career items.

What is the difference in career development on the basis of ethnic origin?

There are no differences in levels of career development as measured by the CPRI which are attributable to ethnic origin. In other words, the CPRI appears to be ethnically unbiased.

What are the differences on the basis of students' lunch rate, which estimates family income, and level of career development?

Students' lunch rate differentiates family income level. In other words, the family income of students who pay the full lunch rate is greater than \$24,790 annually for

a family of four. For students paying the reduced lunch rate, the family income falls in the range between \$17,420 and \$24,790. For students reporting that they receive free lunches, the family income must be lower than \$17,420. Students paying reduced rates scored higher on the CPRI than did students paying either full prices or getting free lunch. However, noteworthy differences did not occur between students paying the full lunch price and those receiving free lunches. This means that students who paid the reduced lunch rate possessed a greater degree of desirable work-related behaviors, attitudes, aspirations, and information than did students in the higher or lower family income levels. One reason for this difference might be that students in this study who paid reduced lunch fees have had the importance of careers stressed to them more strongly than their peers, and therefore, have a stronger focus on careers. These are the children of parents who work for a salary yet still receive some financial assistance. These students might also have a stronger motivation to have a more financially advantaged lifestyle than do their peers.

Implications

The development and testing of the CPRI have implications for theory, training, practice in counseling, and research. The theoretical concepts of aspiring toward a career, seeking and gaining career information, and

exhibiting work-related behaviors and attitudes are reinforced as elements of career development among middle/junior high school students. Therefore, training of counselors and other educational professionals should include these career concepts as preparatory to career decision making and as essential aspects of employability skills.

In addition, the CPRI may be useful for diagnosing deficiencies as well as pinpointing students with superior levels in these areas so that counselors and teachers can more effectively focus remedial and supplemental career development interventions. Career guidance activities can be organized and developed according to these concepts. The CPRI could be used as pretest and posttest measures of the effectiveness of career development interventions with middle/junior high school students.

The differences noted between males and females on the four factors could have implications for career guidance. More specifically, counselors and teachers should keep in mind that males tend to be action-oriented in dealing with career issues while females tend to be emotional and intuitive.

Differences in levels of career development among students paying different lunch rates also have implications for career guidance. Students who paid reduced lunch fees have a stronger focus on careers than do students who were more or less financially advantaged. This might indicate a

desire for a more affluent lifestyle, which might be used to motivate them in educational as well as career directions.

Recommendations

Further research is indicated to examine the interaction between gender and the CPRI, between family income level (using other determinants than lunch rates) and the CPRI, and between grade level and the CPRI. Giving the CPRI at the beginning of the school year might give clearer descriptions of levels of career development at each grade. In other words, giving the CPRI to seventh, eighth, and ninth grade students at the end of the school year might more clearly describe eighth, ninth, and tenth grade students, respectively, at the beginning of the next school year. Gender differences in levels of career development should be examined to clarify possible influences. Family income levels as well as other family influences, such as parental occupations, should be examined to clarify their influence on middle and junior high school students' readiness for career planning.

Further research is needed to refine the current CPRI to a shorter form including just those 48 items which loaded highly (criterion $\geq .40$) on the four factors in the initial factor analyses with Group I. The revised CPRI could be then be administered to a new sample for the purposes of clarifying the factor structure as well examining its relationship to the subject variables. More research should

be done to establish an instrument which yields maximal information about career planning readiness from a minimal number of items. Also, it might be useful to develop other items in order to create a second form of the instrument. Alternate forms are useful to minimize testing influences when measuring treatment effects. In addition, future research could include other grade levels, such as grade six which is part of some middle schools, to establish norms for the CPRI and to standardize the instrument for ease of interpretation.

Further research is indicated to clarify the relationships among the CPRI, achievement level, and other measures of levels of career development. The CPRI appears to be distinctive in its independence of achievement level, and therefore amenable to broader applications with middle school students than other available career development instruments.

Summary

Instrument development is a lengthy and tedious process. This study has been a first step toward the development of an instrument to assess the level of career development among young adolescents, or more specifically, the career planning readiness of middle/junior high school students.

The Career Planning Readiness Inventory (CPRI) evolved through several pilot studies and reviews by experts in the

field to the form which was examined in this present study. As a result the career dimensions of career exploration, work-related attitudes and behaviors, and career aspirations were further defined and theoretically supported. In summary, the CPRI has been developed and validated in order to provide an instrument in an area which lacked appropriate research and diagnostic inventories, namely, career development with early adolescents. Assistance is offered by the CPRI in evaluating middle and junior high school students' levels of career development. In addition, by providing a practical, reliable, and valid career development instrument for this population, the CPRI could further enhance the educational and career guidance of middle and junior school students.

APPENDIX A

CAREER PLANNING READINESS INVENTORY

CAREER PLANNING AND READINESS INVENTORY
ADMINISTRATION PROCEDURES

DISTRIBUTION OF MATERIALS: Distribute test booklets and answer sheets. From the instructions on the back of the answer sheet read aloud #1 - 8, omitting # 2 (Social Security Number). This is not a time test; however, students should finish during the 25-minute period.

IN THE BEGINNING, SAY:

Look at the front of your test booklet. Read the directions silently as I read them aloud:

The Career Planning Readiness Inventory has been designed to survey thoughts and feelings which are important for planning your career. There are no right or wrong answers, only the ones which fit you best. Complete this inventory carefully and thoughtfully, marking the responses which fit you. Be sure to answer all the items, numbers 1-67.

Turn to page one in your booklet. The responses you will use are at the top of the page.

If the statement fits you closely, mark A for Strongly Agree.

If it fits you some, mark B for Agree.

If you're not sure, mark C.

If doesn't quite fit you, mark D for Disagree.

If it doesn't fit you at all, mark E for Strongly Disagree.

Read number one silently, and mark the response that best fits you. [Pause for students to respond.] Are there any questions? [Pause.] Begin. Work quickly and quietly. I will collect the materials when everyone is finished.

WHEN EVERYONE HAS FINISHED, SAY:

This is the end of the testing session. Make sure you have completely blackened your answers and have completely erased any unwanted marks on your answer sheet.

COLLECTION OF MATERIALS: First, collect the answer sheets, and clip them together. Then, collect the test booklets. Place the answer sheets and the test booklets in the envelope provided.

THANK YOU FOR YOUR ASSISTANCE.

CAREER PLANNING READINESS INVENTORY

Part A

The Career Planning Readiness Inventory has been designed to survey thoughts and feelings which are important for planning your career. There are no right or wrong answers, only the ones which fit you best. Complete this inventory carefully and thoughtfully, marking the responses which fit you. Be sure to answer all the items, numbers 1-66.

CPRI - 1

Strongly Agree	Agree	Not Agree	Disagree	Strongly Disagree
A	B	C	D	E

Sample

1. My favorite time of day is lunch.

2. I am aware of what employers look for when they hire people.

3. I like to imagine the career track I will take.

4. I have talked seriously with my parents about jobs and my future.

5. You can count on me to do what is right.

6. I am aware of the kind of job openings which are going to decrease in the future.

7. I have had successful talks with my school counselor about my plans for high school.

8. I don't know the kinds of jobs which will have more openings in the future.

9. I come to school even though I don't always feel like it.

10. Helping others is important to me.

CPRI - 2

Strongly Agree	Agree	Sure	Disagree	Strongly Disagree
A	B	C	D	E

11. I follow directions to complete a task.

12. I am aware of how my interests and skills match jobs.

13. I see myself making a contribution to society through the work I will do.

14. I am unsure about ways to find and get a job.

15. I respect the rights and opinions of others.

16. I get excited about the opportunities in my future.

17. I have talked a lot with my friends about our career plans.

18. I know what kind of work I want to do in the future.

19. I am open to suggestions for improving what I do.

20. When class assignments are given, I barely listen.

GO ON TO THE NEXT PAGE

CPRI - 3

Strongly Agree	Agree	Not Agree	Sure	Disagree	Strongly Disagree
A	B	C	D	E	

21. I have hardly thought about which classes will prepare me for the occupation I want.
22. I know which jobs have the best opportunities for career advancement.
23. I have received a lot of useful information about careers from the library.
24. I usually start to work on an assignment right away.
25. I admire people who work and have jobs.
26. I look forward to making choices about my career.
27. Honest work has value in itself.
28. I am usually on time for school.
29. I am aware of how education relates to well paying jobs.
30. I doubt that I can reach my goals.

CPRI - 4

Strongly Agree	Agree	Not Agree	Sure	Disagree	Strongly Disagree
A	B	C	D	E	

31. I dream about the kind of life I'll have when I grow up.
32. I can see myself being successful in a job.
33. I know what I want to do when I graduate from high school.
34. I have learned very little about careers by writing a career report for class.
35. I bring my study materials to class regularly.
36. Once I know what to do, I work independently to complete my assignments.
37. I usually quit a task before it is done.
38. It has been very helpful to interview someone who has a job I want to have in the future.
39. I have learned a lot about different jobs by visiting job sites.
40. I have some ideas about which jobs fit my interests.

GO ON TO THE NEXT PAGE

	Strongly Agree	Agree	Sure	Disagree	Disagree	Strongly Disagree
	A	B	C	D	E	F

41. I stick with a school assignment until it is done.

42. I organize my study time to work effectively.

43. I can picture myself graduating from high school.

44. I can easily classify jobs into groups according to data, people, and things.

45. I usually turn my homework in late.

46. I have trouble locating information about careers in my school library.

47. I take responsibility for what I do.

48. I am determined to do well.

49. I look forward to learning about the job I want.

50. I am familiar with the guidance resources for career and college exploration.

	Strongly Agree	Agree	Sure	Disagree	Disagree	Strongly Disagree
	A	B	C	D	E	F

51. I have had some very good talks with my teachers about the education needed for different occupations.

52. I am aware of the effect my strengths and weaknesses have on my career choices.

53. I have difficulty matching jobs with the education required for them.

54. I envision the lifestyle I will make for myself in the future.

55. I have an idea of what colleges offer and the degrees they give.

56. When I think of my future, I get excited.
57. I get upset when something happens that I didn't count on.

58. I usually participate in class discussions.

59. I am aware of the relationship between resumes and job interviews.

60. I usually disobey school rules.

61. I am proud of what I do.

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Part B: Information

62. Sex: A. Male B. Female
63. Age: A. 12 B. 13 C. 14
D. 15 E. Other
64. Grade: A. 8 B. 7 C. 6 D. 5
65. Race: A. White, not Hispanic
B. Black, not Hispanic
C. Hispanic
D. American Indian/Alaskan
E. Asian/Pacific Islander
66. Lunch rate:
A. Pay full price
B. Pay reduced lunch fee
C. Get free lunch

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APPENDIX B

SUPPORTIVE DATA

Table B1

CPRI Item Means, Standard Deviations, Standard Error of Mean: Citrus

Item #	Mean	SD	SE
2	2.03	0.87	.08
3	1.78	0.93	.09
4	2.63	1.24	.12
5	1.92	0.97	.09
6	2.43	1.04	.10
7	3.66	1.12	.11
8	3.12	1.30	.12
9	1.77	1.14	.11
10	1.64	0.83	.08
11	1.74	0.68	.06
12	1.97	0.97	.09
13	2.11	0.96	.09
14	2.61	1.20	.12
15	1.64	0.70	.07
16	1.86	1.06	.10
17	2.52	1.28	.12
18	1.82	1.14	.11
19	1.81	0.96	.09
20	2.17	1.22	.12
21	2.91	1.41	.14

Table B1, continued

Item #	Mean	SD	SE
22	2.52	1.02	.10
23	3.46	1.22	.12
24	2.46	1.21	.12
25	1.83	0.84	.08
26	1.79	0.98	.09
27	1.52	0.76	.07
28	1.29	0.67	.06
29	1.38	0.74	.07
30	1.88	1.25	.12
31	1.55	0.77	.07
32	1.52	0.69	.07
33	1.89	1.13	.11
34	2.64	1.34	.13
35	1.59	0.74	.07
36	1.94	1.00	.10
37	2.07	1.17	.11
38	2.30	1.17	.11
39	2.64	1.31	.13
40	1.67	0.92	.09
41	2.04	1.03	.10

Table B1, continued

Item #	Mean	SD	SE
42	2.48	1.16	.11
43	1.34	0.71	.07
44	2.47	1.08	.10
45	1.06	1.12	.11
46	2.78	1.22	.12
47	1.59	0.75	.07
48	1.26	0.62	.06
49	1.48	0.83	.08
50	2.33	1.13	.11
51	3.33	1.24	.12
52	1.78	0.87	.08
53	2.52	1.24	.12
54	1.69	0.82	.08
55	2.07	1.07	.10
56	1.79	1.03	.10
57	2.30	1.17	.11
58	1.06	1.14	.11
59	2.19	0.91	.09
60	4.10	1.25	.12
61	1.62	0.95	.09
Total	125.20	21.44	2.16

Table B2

Intercorrelations of CPRI Items 2-61: Group 1

Item	2	3	4	5	6	7
2	--					
3	.16**	--				
4	.13**	.19**	--			
5	.18**	.19**	.19**	--		
6	.19**	.19**	.14**	.09**	--	
7	.10**	.09**	.21**	.10**	.13**	--
8	.05	.05	.08*	.05	.13**	-.00
9	.07	.06	.05	.11**	.01	-.06
10	.17**	.10**	.23**	.26**	.10**	.06
11	.19**	.19**	.19**	.32**	.12**	.10**
12	.26**	.22**	.25**	.20**	.23**	.11**
13	.18**	.21**	.30**	.23**	.14**	.14**
14	.16**	.27**	.08*	.09**	.05	-.02
15	.18**	.08*	.17**	.26**	.07	.04
16	.17**	.22**	.27**	.22**	.08*	.09*
17	.13**	.26**	.26**	.14**	.13**	.18**
18	.12**	.19**	.26**	.15**	.07	.03

*p < .001

**p < .0001

Table B2, continued

Item	8	9	10	11	12	13
2						
3						
4						
5						
6						
7						
8	--					
9	.02	--				
10	.04	.10**	--			
11	.10**	.09**	.31**	--		
12	.08*	.04	.23**	.25**	--	
13	.06	.12**	.28**	.28**	.28**	--
14	.20**	-.02	.05	.08*	.13**	.10**
15	.02	.11**	.39**	.35**	.19**	.21**
16	.05	.13**	.30**	.28**	.24**	.30**
17	.04	.06	.20**	.12**	.16**	.19**
18	.06	.10**	.15**	.14**	.20**	.25**

* $p < .001$ ** $p < .0001$

Table B2, continued

Item	14	15	16	17	18
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14	--				
15	.10**	--			
16	.07	.26**	--		
17	.06	.15**	.25**	--	
18	.10**	.17**	.24**	.17**	--

* $p < .001$ ** $p < .0001$

Table B2, continued

Item	2	3	4	5	6	7
19	.16**	.23**	.13**	.23**	.12**	.03
20	.11**	.14**	.10**	.20**	-.00	.04
21	.14**	.13**	.17**	.13**	.06	.08*
22	.17**	.14**	.23**	.14**	.23**	.16**
23	.07	.04	.16**	.06	.13**	.25**
24	.16**	.13**	.21**	.24**	.12**	.13**
25	.18**	.21**	.21**	.24**	.09**	.11**
26	.22**	.22**	.25**	.22**	.12**	.04
27	.21**	.27**	.20**	.26**	.09**	.04
28	.13**	.17**	.08*	.21**	.05	-.04
29	.21**	.24**	.14**	.22**	.08*	-.01
30	.10**	.19**	.06	.12**	-.05	-.09**
31	.14**	.26**	.19**	.17**	.07*	.04
32	.23**	.27**	.26**	.24**	.06	.05
33	.15**	.23**	.30**	.17**	.12**	.06
34	.04	.04	.07	.00	.02	-.07
35	.15**	.21**	.16**	.26**	.09**	.03

*p < .001

**p < .0001

Table B2, continued

Item	8	9	10	11	12	13
19	.04	.12**	.26**	.27**	.20**	.22**
20	.09**	.12**	.20**	.29**	.14**	.14**
21	.14**	.04	.10**	.12**	.19**	.14**
22	.08*	.02	.12**	.11**	.24**	.25**
23	.00	-.01	.06	.09**	.08*	.09**
24	-.00	.11**	.22**	.27**	.21**	.21**
25	.04	.09	.30**	.24**	.18**	.23**
26	.06	.11**	.28**	.27**	.28**	.27**
27	.06	.13**	.36**	.28**	.25**	.27**
28	.06	.15**	.25**	.24**	.17**	.13**
29	.07	.16**	.28**	.26**	.25**	.26**
30	.09**	.10**	.17**	.13**	.13**	.11**
31	.05	.14**	.24**	.17**	.17**	.20**
32	.07	.15**	.26**	.29**	.24**	.26**
33	.05	.10**	.20**	.21**	.25**	.27**
34	.06	.02	.05	.06	.05	.02
35	.10**	.14**	.29II	.34**	.20**	.24**

*p < .001

**p < .0001

Table B2, continued

Item	14	15	16	17	18	19
19	.10**	.29**	.23**	.16**	.14**	--
20	.23**	.22**	.16**	.00	.10**	.20**
21	.27**	.13**	.18**	.07*	.14**	.13**
22	.09**	.11**	.16**	.18**	.22**	.11**
23	-.11**	.05	.08*	.17**	.03	.04
24	.06	.21**	.20**	.16**	.13**	.18**
25	.06	.29**	.20**	.20**	.16**	.22**
26	.11**	.26**	.36**	.21**	.28**	.25**
27	.11**	.31**	.32**	.14**	.18**	.21**
28	.07	.23**	.23**	.07*	.14**	.18**
29	.12**	.24**	.24**	.12**	.18**	.28**
30	.22**	.18**	.18**	-.00	.15**	.20**
31	.05	.21**	.29**	.20**	.21**	.21**
32	.18**	.24**	.33**	.22**	.30**	.26**
33	.12**	.20**	.29**	.22**	.47**	.19**
34	.14**	.04	.08*	-.01	.04	.06
35	.09**	.29**	.26**	.10**	.14**	.22**

* $p < .001$ ** $p < .0001$

Table B2, continued

Item	20	21	22	23	24	25
19						
20	--					
21	.28**	--				
22	.03	.14**	--			
23	-.08*	-.09**	.15**	--		
24	.26**	.09**	.18**	.14**	--	
25	.17**	.12**	.12**	.08*	.20**	
26	.16**	.17**	.20**	.05	.21**	.28**
27	.24**	.20**	.13**	-.04	.22**	.34**
28	.21**	.14**	.05	-.04	.19**	.19**
29	.26**	.18**	.09**	-.06	.14**	.26**
30	.37**	.29**	.03	-.14**	.06	.15**
31	.13**	.06	.10**	.07*	.13**	.22**
32	.22**	.19**	.18**	.00	.22**	.27**
33	.14**	.18**	.20**	.08*	.17**	.21**
34	.18**	.17**	.00	-.02	.01	.05
35	.33**	.19**	.11**	-.00	.26**	.20**

*p < .001

**p < .0001

Table B2, continued

Item	26	27	28	29	30	31
19						
20						
21						
22						
23						
24						
25						
26	--					
27	.32**	--				
28	.21**	.28**	--			
29	.32**	.36**	.29**	--		
30	.19**	.29**	.22**	.35**	--	
31	.27**	.26**	.17**	.22**	.16**	--
32	.36**	.31**	.25**	.34**	.33**	.32
33	.33**	.24**	.19**	.29**	.20**	.26**
34	.08*	.10**	.04	.11**	.24**	.06
35	.25**	.34**	.33**	.31**	.24**	.16**

* $p < .001$ ** $p < .0001$

Table B2, continued

Item	32	33	34	35
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
32	--			
33	.33**	--		
34	.08*	.07*	--	
35	.26**	.22**	.06	--
*p < .001	**p < .0001			

Table B2, continued

Item	2	3	4	5	6	7
36	.20**	.18**	.15**	.28**	.09**	.03
37	.09**	.12**	.04	.15**	-.04	-.09
38	.13**	.16**	.22**	.17**	.08*	.13**
39	.08*	.08*	.19**	.11**	.13**	.19**
40	.17**	.24**	.17**	.18**	.08*	.07
41	.16**	.14**	.17**	.28**	.09**	.13**
42	.16**	.14**	.23**	.21**	.13**	.14**
43	.17**	.24**	.16**	.24**	.08*	.02
44	.21**	.18**	.21**	.23**	.24**	.20**
45	.11**	.12**	.02	.18**	.02	-.06
46	.01	.03	.04	.05	.00	-.04
47	.16**	.17**	.20**	.27**	.13**	.04
48	.23**	.20**	.16**	.26**	.07	.02
49	.19**	.31**	.21**	.25**	.08*	.04
50	.19**	.13**	.24**	.16**	.21**	.22**
51	.10**	.03	.22**	.12**	.10**	.31**
52	.22**	.17**	.17**	.18**	.16**	.11**

*p < .001

**p < .0001

Table B2, continued

Item	8	9	10	11	12	13
36	.05	.10**	.26**	.33**	.19**	.20**
37	.08*	.08*	.14**	.19**	.12**	.06
38	-.01	.96	.19**	.19**	.12**	.19**
39	.05	-.02	.15**	.10**	.15**	.18**
40	.07	.11**	.22**	.21**	.26**	.24**
41	.05	.10**	.22**	.35**	.19**	.18**
42	.04	.07	.25**	.28**	.20**	.21**
43	.05	.14**	.26**	.25**	.20**	.23**
44	.05	.04	.21**	.20**	.25**	.24**
45	.11**	.08*	.14**	.22**	.13**	.09**
46	.10**	-.02	.04	.08*	.05	.00
47	.04	.10**	.32**	.34**	.24**	.21**
48	.06	.14**	.29**	.30**	.19**	.24**
49	.05	.11**	.31**	.27**	.25**	.28**
50	.07	.03	.20**	.15**	.22**	.18**
51	.04	-.02	.08*	.06	.12**	.15**
52	.08*	.07	.16**	.19**	.25**	.20**

* $p < .001$ ** $p < .0001$

Table B2, continued

Item	14	15	16	17	18	19
36	.11**	.27**	.24**	.14**	.20**	.21**
37	.24**	.16**	.13**	.01	.08*	.16**
38	.03	.18**	.23**	.22**	.19**	.22**
39	-.01	.07	.10**	.19**	.05	.09**
40	.16**	.20**	.27**	.19**	.30**	.22**
41	.07	.24**	.22**	.14**	.13**	.17**
42	.01	.20**	.22**	.15**	.14**	.16**
43	.16**	.28**	.29**	.14**	.16**	.24**
44	.04	.15**	.21**	.20**	.16**	.16**
45	.20**	.15**	.12**	.01	.06	.13**
46	.20**	.04	.02	-.04	.05	.03
47	.10**	.31**	.27**	.14**	.17**	.26**
48	.16**	.30**	.30**	.15**	.20**	.26**
49	.13**	.26**	.34**	.17**	.28**	.30**
50	.08*	.13**	.18**	.21**	.20**	.12**
51	-.00	.00	.11**	.22**	.06	.05
52	.12**	.17**	.18**	.18**	.18**	.19**

* $p < .001$ ** $p < .0001$

Table B2, continued

Item	20	21	22	23	24	25
36	.28**	.12**	.14**	.02	.30**	.26**
37	.38**	.28**	-.02	.16**	.14**	.14**
38	.10**	.09**	.19**	.19**	.17**	.22**
39	-.00	.00	.19**	.27**	.12**	.10**
40	.18**	.17**	.21**	.03	.15**	.22**
41	.30**	.12**	.14**	.11**	.37**	.24**
42	.21**	.11**	.19**	.23**	.37**	.23**
43	.28**	.18**	.12**	-.04	.19**	.26**
44	.09**	.10**	.29**	.20**	.23**	.19**
45	.42**	.25**	-.01	-.15**	.17**	.15**
46	.19**	.16**	-.04	-.01	.04	.03
47	.24**	.14**	.14**	-.01	.23**	.24**
48	.30**	.17**	.14**	-.01	.21**	.30**
49	.22**	.19**	.15**	-.01	.22**	.26**
50	.10**	.08*	.25**	.18**	.18**	.14**
51	-.06	-.00	.19**	.29**	.19**	.10**
52	.11**	.13**	.21**	.10**	.18**	.22**

*p < .001

**p < .0001

Table B2, continued

Item	26	27	28	29	30	31
36	.30**	.30**	.24**	.28**	.17**	.19**
37	.18**	.22**	.21**	.26**	.43**	.12**
38	.24**	.21**	.18**	.19**	.06	.15**
39	.11**	.04	-.00	.04	-.04	.18**
40	.31**	.31**	.24**	.29**	.23**	.28**
41	.22**	.23**	.23**	.20**	.15**	.18**
42	.21**	.22**	.17**	.12**	.10**	.12**
43	.28**	.33**	.26**	.35**	.33**	.26**
44	.22**	.19**	.11**	.18**	.05	.15**
45	.16**	.24**	.23**	.24**	.39**	.09**
46	.06	.08*	.06	.09**	.20**	.01
47	.31**	.33**	.24**	.28**	.22**	.20**
48	.30**	.36**	.32**	.33**	.28**	.23**
49	.40**	.39**	.26**	.37**	.28**	.29**
50	.19**	.16**	.06	.11**	.04	.14**
51	.08*	-.01	-.06	-.02	-.12**	.08*
52	.23**	.23**	.13**	.25**	.13**	.17**

* $p < .0001$ ** $p < .0001$

Table B2, continued

Item	32	33	34	35	36	37
36	.29**	.21**	.08*	.34**	--	
37	.27**	.12**	.19**	.23**	.24**	--
38	.23**	.26**	.04	.11**	.20**	.08*
39	.10**	.11**	-.03	.07*	.06	-.06
40	.38**	.35**	.04	.21**	.23**	.22**
41	.22**	.19**	-.00	.32**	.34**	.24**
42	.21**	.19**	-.00	.27**	.27**	.12**
43	.44**	.27**	.10**	.31**	.28**	.27**
44	.24**	.23**	-.00	.20**	.26**	.04
45	.21**	.13**	.19**	.33**	.28**	.42**
46	.05	.06	.18**	.10**	.07	.24**
47	.33**	.22**	.09**	.32**	.33**	.23**
48	.37**	.28**	.08*	.36**	.33**	.27**
49	.41**	.34**	.09**	.30**	.30**	.23**
50	.21**	.19**	.02	.16**	.16**	.04
51	.06	.08*	.01	.03	.04	-.11**
52	.23**	.23**	.04	.14**	.20**	.09**

* $p < .001$ ** $p < .0001$

Table B2, continued

Item	38	39	40	41	42	43
36						
37						
38	--					
39	.21**	--				
40	.23**	.12**	--			
41	.17**	.15**	.19**	--		
42	.22**	.21**	.14**	.42**	--	
43	.14**	.10**	.33**	.27**	.14**	--
44	.23**	.24**	.27**	.17**	.32**	.18**
45	.05	-.08	.18**	.21**	.15**	.28**
46	-.01	-.03	.01	.09**	.02	.10**
47	.18**	.10**	.29**	.28**	.26**	.33**
48	.16**	.10**	.32**	.31**	.26**	.41**
49	.22**	.08**	.39**	.22**	.21**	.38**
50	.19**	.19**	.20**	.17**	.25**	.16**
51	.16**	.28**	.01	.17**	.25**	-.02
52	.19**	.15**	.30**	.20**	.20**	.24**

* $p < .001$ ** $p < .0001$

Table B2, continued

Item	44	45	46	47	48	49
36						
37						
38						
39						
40						
41						
42						
43						
44	--					
45	.07	--				
46	.00	.24**	--			
47	.23**	.23**	.08*	--		
48	.20**	.33**	.08*	.38**	--	
49	.21**	.26**	.08*	.38**	.39**	--
50	.21**	.26**	.04	.14**	.17**	.17**
51	.21**	-.13**	-.03	.02	-.00	.23**
52	.26**	.08*	.01	.18**	.23**	.27**

*p < .001

**p < .0001

Table B2, continued

Item	50	51	52
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50	--		
51	.23**	--	
52	.25**	.19**	--

*p < .001

**p < .0001

Table B2, continued

Item	2	3	4	5	6	7
53	.10**	.09**	.08*	.10**	.02	-.03
54	.19**	.26**	.20**	.18**	.12**	.09**
55	.18**	.14**	.25**	.15**	.21**	.13**
56	.13**	.25**	.24**	.21**	.08*	.12**
57	-.07	-.12**	-.05	-.07	-.04	.02
58	.14**	.16**	.24**	.20**	.13**	.15**
59	.25**	.15**	.18**	.18**	.19**	.13**
60	.10**	.11**	.05	.19**	-.02	-.04
61	.14**	.13**	.13**	.19**	.08*	.07

* $p < .001$ ** $p < .0001$

Table B2, continued

Item	8	9	10	11	12	13
53	.13**	.05	.12**	.08*	.14**	.08*
54	.09**	.08	.19**	.20**	.22**	.24**
55	.03	.04	.13**	.17**	.21**	.18**
56	.05	.08*	.25**	.23**	.20**	.24**
57	.04	-.05	-.10	-.06	-.07	-.05
58	.06	.11**	.22**	.20**	.17**	.18**
59	.10**	.08*	.18**	.17**	.24**	.20**
60	.10**	.06	.18**	.24**	.11**	.10**
61	.06	.11**	.19**	.22**	.18**	.19**

* $p < .001$ ** $p < .0001$

Table B2, continued

Item	14	15	16	17	18	19
53	.25**	.12**	.09**	.02	.07	.10**
54	.08*	.19**	.28**	.18**	.21**	.20**
55	.10**	.13**	.16**	.18**	.19**	.10**
56	.05	.26**	.38**	.25**	.23**	.22**
57	.02	-.09	-.12**	-.10**	-.05	-.09**
58	.05	.18**	.24**	.20**	.16**	.19**
59	.11**	.11**	.17**	.18**	.17**	.16**
60	.20**	.21**	.15**	.00	.07	.16**
61	.06	.14**	.23**	.11**	.15**	.17**

* $p < .001$ ** $p < .0001$

Table B2, continued

Item	20	21	22	23	24	25
53	.29**	.32**	.07	-.08*	.08*	.10**
54	.15**	.17**	.18**	.04	.13**	.20**
55	.10**	.12**	.26**	.16**	.14**	.16**
56	.15**	.14**	.16**	.07	.22**	.27**
57	.03	.06	-.04	-.02	-.01	-.09**
58	.14**	.08*	.17**	.12**	.22**	.21**
59	.10**	.10**	.25**	.13**	.15**	.18**
60	.39**	.29**	-.03	-.12**	.12**	.18**
61	.17**	.07	.14**	.07	.17**	.14**

* $p < .001$ ** $p < .0001$

Table B2, continued

Item	26	27	28	29	30	31
53	.17**	.14**	.12**	.17**	.31**	.07
54	.28**	.26**	.19**	.25**	.18**	.30**
55	.21**	.17**	.12**	.10**	.07	.13**
56	.30**	.27**	.21**	.26**	.16**	.34**
57	-.13**	-.13**	-.08*	-.11**	.04	-.16**
58	.23**	.24**	.16**	.20**	.15**	.17**
59	.20**	.18**	.12**	.19**	.08*	.16**
60	.14**	.25**	.28**	.27**	.39**	.13**
61	.24**	.21**	.13**	.16**	.16**	.18**

* $p < .001$ ** $p < .0001$

Table B2, continued

Item	32	33	34	35	36	37
53	.16**	.11**	.17**	.17**	.12**	.34**
54	.36**	.25**	.02	.23**	.24**	.15**
55	.23**	.26**	.04	.13**	.16**	.05
56	.34**	.30**	.05	.22**	.25**	.13**
57	-.12**	-.09**	.07	-.09**	-.08*	.04
58	.28**	.19**	.06	.22**	.23**	.11**
59	.21**	.20**	.03	.17**	.16**	.04
60	.22**	.12**	.18**	.30**	.24**	.38**
61	.28**	.16**	.05	.20**	.24**	.14**

* $p < .001$ ** $p < .0001$

Table B2, continued

Item	38	39	40	41	42	43
53	.02	-.01	.16**	.05	.07	.18**
54	.15**	.13**	.32**	.21**	.16**	.29**
55	.22**	.21**	.25**	.17**	.18**	.20**
56	.24**	.15**	.30**	.24**	.22**	.31**
57	-.09**	-.02	-.14**	-.02	-.03	-.10**
58	.15**	.17**	.24**	.25**	.26**	.25**
59	.19**	.18**	.22**	.17**	.20**	.14**
60	.05	-.09**	.17**	.22**	.10**	.29**
61	.10**	.08*	.19**	.23**	.21**	.25**

* $p < .001$ ** $p < .0001$

Table B2, continued

Item	44	45	46	47	48	49
53	.09**	.36**	.24**	.12**	.19**	.16**
54	.21**	.14**	.01	.26**	.31**	.34**
55	.27**	.04	.00	.17**	.20**	.18**
56	.21**	.14**	.02	.26**	.32**	.37**
57	-.08*	.03	.13**	-.11**	-.12**	-.19**
58	.26**	.09**	.00	.26**	.28**	.22**
59	.28**	.06	.00	.22**	.20**	.24**
60	.06	.46**	.19**	.22**	.28**	.23**
61	.20**	.17**	.05	.24**	.28**	.25**

* $p < .001$ ** $p < .0001$

Table B2, continued

Item	50	51	52	53	54	55
53	.04	-.06	.12**	--		
54	.16**	.06	.26**	.17**	--	
55	.28**	.20**	.25**	.09**	.20**	--
56	.22**	.12**	.23**	.10**	.35**	.19**
57	.09**	.01	-.07*	.08*	-.08*	-.03
58	.23**	.19**	.23**	.08*	.24**	.24**
59	.29**	.20**	.28**	.06	.20**	.31**
60	-.01	-.12**	.09**	.32**	.16**	.04
61	.16**	.15**	.18**	.10**	.21**	.14**

*p < .001

**p < .0001

Table B2, continued

Item	56	57	58	59	60	61
53						
54						
55						
56	--					
57	-.09**	--				
58	.30**	-.06	--			
59	.20**	-.07	.21**	--		
60	.14**	.01	.08*	.06	--	
61	.24**	-.03	.20**	.16**	.16**	--

*p < .001

**p < .0001

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BIOGRAPHICAL SKETCH

Virginia Gilbert was born November 30, 1953 in Brooksville, Florida. She is the daughter of John E. (Buck) Willis, a retired commercial fisherman and Control Center Operator for Florida Power Corporation, and Creola Willis, a retired school teacher and Director of Elementary Education in Citrus County, Florida. In Virginia's youth education received highest priority; excellence was expected, never an option.

She holds a B. A. in psychology from Lee College in Cleveland, Tennessee, graduating summa cum laude in 1975, a M. A. in psychology from Middle Tennessee State University (1977), and a Specialist in Education in the area of agency and community counseling from the University of Florida (1987).


While pursuing her doctoral studies at the University of Florida, she supervised interns in school counseling and team taught classes in career development, and organization and administration of guidance services. In addition, she taught undergraduate classes in psychology and human growth and development at Central Florida Community College.

Her professional career has included teaching elementary, middle, college and graduate school students.

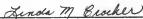
She has designed and implemented new career education programs for elementary and middle school students that emphasized career exploration and "hands-on" work experiences. In addition, she started peer facilitation programs at two schools. Her innovative career programs have been shared at regional and state conferences.

She enjoys studying the Bible and playing the piano. In addition to intellectual pursuits, she likes to make woodcrafts by hand. Other hobbies include running, swimming, bicycling, tennis, canoeing, gardening, and raising animals.

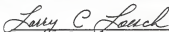
I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


Robert D. Myrick, Chair
Professor of Counselor Education

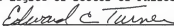
I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


Linda M. Crocker
Professor of Foundations of
Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


Larry C. Loesch
Professor of Counselor Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.


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